THE OIL WEEKLY

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Oil Man's Calendar

SEPT. 6–10	American Chemical Society, Rochester, New York.
8– 9	West Virginia Oil & Natural Gas Association, Charleston.
15–17	National Petroleum Association, Hotel Traymore, Atlantic City.
16–19	Pacific Oil Show & Black Gold Festival, Taft, California.
22–24	American Society of Mechanical Engineers, Erie, Pennsylvania.
24–25	Michigan Petroleum Association, Traverse City.
SEPT. 27 OCT. 1	American Gas Association, Cleveland, Ohio.
OCT. 4–9	Chicago Exposition of Power & Mechanical Engineering, New International Amphitheatre, Chicago.
7–8	American Institute of Mining and Metallurgical Engineers, Petroleum Division, Fall Meeting, Oklahoma City, Oklahoma.
11–15	National Safety Congress & Exposition, Kansas City, Missouri.
11–16	Oil-World Exposition, Houston, Texas.
13–14	Indiana Independent Petroleum Association, Indianapolis, Ind.
13–15	Institution of Mechanical Engineers, London, England, discussion on Lubricants and Lubrication.
14–16	American Association of Petroleum Geologists, Mid-Year Meeting, Pittsburgh, Pennsylvania.
14–16	Independent Petroleum Association of America, Houston, Texas.
18–22	American Welding Society, Atlantic City, New Jersey.
18–23	American Institute of Mining & Metal. Engineers, Atlantic City.
27–28	Indiana Independent Petroleum Association, Indianapolis, Ind.
29–30	Mid-Continent Oil and Gas Association, Texas Division, Dallas, Texas.
NOV. 8–12	American Petroleum Institute, (Annual), Chicago, Illinois.
1938 MAR. 16–18	Annual Meeting, American Association of Petroleum Geologists, Roosevelt Hotel, New Orleans, La.

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If you have any interesting oil field pictures—just a little snapshot—others probably would be interested in seeing them. If you will send them to us, we will try to publish as many as possible.

Pictures with some newsy slant are the most desirable. However, they all do not have to be of this type. Views of new discovery wells, some important event, a meeting, panorama scenes in a new or active field, some unusual scene, men connected with oil companies, etc., are good subject material. Photographs containing a sales promotion idea are not solicited, all must be of general interest and of producing and pipe line operations of the industry.

All pictures must be accompanied by full descriptive data, do not make captions too short.

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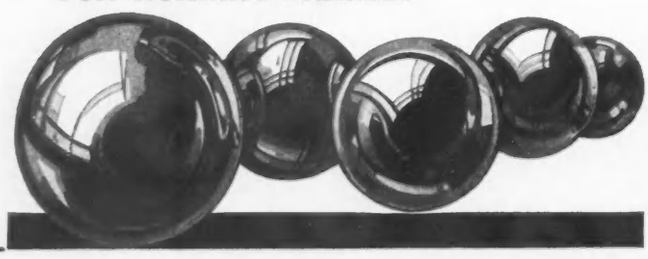

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LOOKING AHEAD

WITH THE EDITOR

Large diameter casing advantageous in gas-lift . . .

Behavior of subsurface flow important . . .

THAT there might be some advantages of employing large diameter casing in deep wells, where there is a very permeable and thick sand body capable of yielding large quantities, has been believed by some engineers. The Oklahoma City district offers the best comparison available, and sufficient time has passed to procure reliable data. In this field wells have been completed with 9⅝-inch casing and adjoining producers have been equipped with 7-inch flow pipe.

In THE OIL WEEKLY next week S. F. Shaw will discuss this condition in an article describing gas-lift operations in the field. Shaw has had an excellent opportunity to study the question, having been in charge of gas-lift operations for one of the companies involved. Moreover, his article will discuss cost of this type of operation. Conclusions reached by him are that large diameter flow strings have proven advantageous, and that deep gas-lift operations, like those at Oklahoma City, are economical and profitable. Detailed data supporting his views are to be presented.

THERE is a simple but definite relationship between the mass rate of fluid (oil, gas and water) production and the drop in pressure causing flow through sands, and the application of these relations may aid in developing a better understanding of reservoir performance and the related problem of well spacing. These are the conclusions drawn by three members of the United States Bureau of Mines; who made a study of oil well behavior based on subsurface pressure and production data, and present their supporting data in an interesting article.

The changing panorama *this week*

It appears that the tightening of proration at the beginning of September was a stitch that barely came in time; that the industry lately has been plunging along on dangerous ground, in pushing the output of wells and refineries to all-time record levels, despite the fact petroleum consumption also has been breaking all previous records.

The supplies turned out at the wells and the refineries have been greater than even that unprecedented demand could absorb, and the cutting back that occurred September 1 was well-advised.

Strict Control Scheduled

The tightening of proration for September was not a half-hearted effort. Some of the states laced the curtailment shoe until it hurt, following or cutting under the Bureau of Mines estimates of demand, in fixing allowables.

The September program of allowables in the 6 states that produce 92 percent of the country's oil requirements is the strictest among all the months this year.

These allowables promise to result in a close balance between production and demand and thus to prevent any running of oil to storage.

Such favorable results were achieved in June and July, this year. But allowables were liberalized in August, resulting in excessive output of the wells and refineries and weakening of the markets.

Excess Output at Wells and Plants

The past week brought further evidence that the markets could not absorb all of the large quantities of crude oil coming forth from the wells.

Crude oil stocks in the United States were increased nearly a million barrels in the week ended August 21, and for the remainder of the month a further substantial addition to storage was indicated, with crude production running at record levels.

Tending to absorb the heavy output of the wells, the refineries have been operating at rates not wholly justified by the market conditions. In the week ended August 28 crude runs to refineries equaled the all-time record of 3,425,000 barrels daily that was established in the week ended July 31.

Operating at that rate, the refineries in the week ended August 28 made more gasoline than was justified even by the prevailing heavy consumption, as evidenced by the fact a smaller than normal withdrawal from gasoline storage occurred.

Crude Cuts Reflect Overproduction

Recent developments in the markets have offered even more convincing evidence of the excessive output of the wells and refineries.

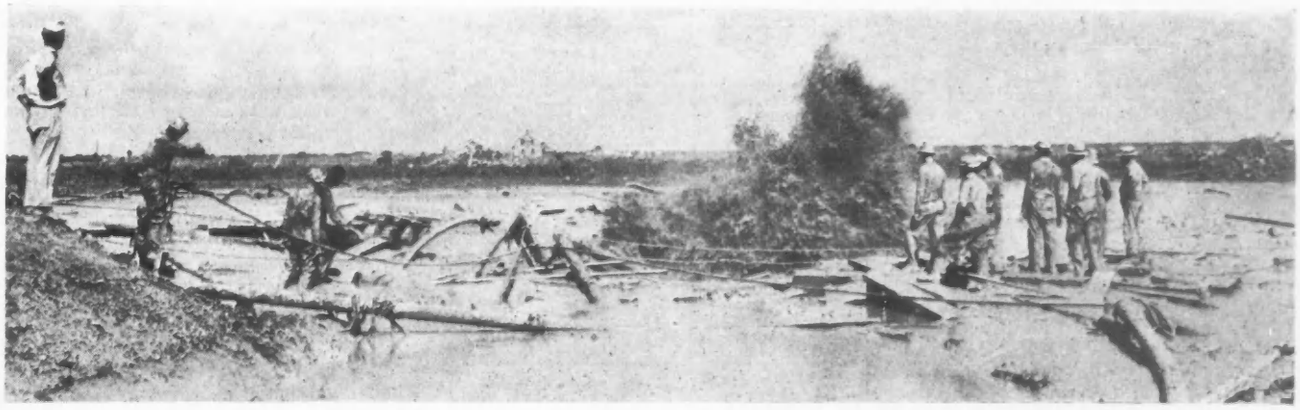
The substantial reductions of prices of Pennsylvania grade crudes last week came only after there had been similar reductions in at least two other areas. Michigan crude prices were reduced several weeks ago, and one important purchaser later lowered postings on lighter crudes of the Gulf Coast.

Pipe Line Proration Back

Another means of solving the problem of an oversupply has been adopted, too, lately. It is the recourse of purchasers to the policy of prorating purchases from the wells feeding into the pipe lines. Proration of crude purchases has been resorted to lately in Kansas, and a similar plan was announced for a North Louisiana field.

It has been indicated also, that several buyers in West Texas and New Mexico desire to curtail purchases there. Goldsmith field, West Texas, for instance, the most active drilling center of the area is delivering excess oil to its largest outlet, and may be further restricted on production unless other major purchasers agree to absorb the surplus.

There is surprise over the demands of one major purchaser for 2 and 3 year crude contracts in



BLOWING WILD after discovering a new gas producing sand for the Nome field, Jefferson County, Texas Gulf Coast, a crater that grew to 30 feet in diameter was formed by Shell Petroleum Corporation's Texas Public Service 4. The well, the most easterly in the field, is at 4745 feet. The picture shows suction pipes being placed in the crater to permit the pumping out of mud, after which an attempt will be made to cap the well. Late in the week the well caught fire.

New Mexico and for similar contracts as inducement to build pipe lines into isolated fields in the north basin area of West Texas. And the move is regarded by some as a precautionary measure, taken in anticipation of a major war.

Pennsylvania Crude Prices Cut

A reduction of 22 cents a barrel in the price of Bradford field crude and a cut of 27 cents in the lower fields were made September 1 by the Joseph Seep Purchasing Agency of the South Penn Oil Company, largest purchaser of Pennsylvania grade crude oil. Tide Water Pipe Line Company simultaneously announced a 22-cent reduction in the Bradford and Allegany fields, and other purchasers were expected to take similar action.

Reason for the decrease, which brings the price of Bradford and Allegany field crude to $2.60 a barrel, and which more than nullifies the 15-cent increase made June 7, is the difference between production and runs to stills. Stocks have increased since early June, and while demand has been curtailed sharply, production has continued unabated.

Aggravating the situation in the Pennsylvania grade fields is the unfavorable relationship between crude oil and refined products, which has failed to improve. Prices of gasoline, kerosene, and fuel oil have been strong, but prices of neutrals, cylinder stocks, and especially bright stocks have been low and weak.

The price cut is the first since July 16, 1935, when a 10-cent reduction was made. Since then, seven consecutive increases raised the price from $1.95 in the Bradford field to $2.82, the highest since February, 1930. The price of Corning grade was unchanged last week, remaining at $1.42 per barrel.

Important Field Strikes

Wasson anticline, straddling the Gaines-Yoakum County line, is shaping up into the largest producing area in West Texas, where major fields are common. Recent completions give the field dimensions of seven by 10 miles. Two wildcats, four miles and six miles north of the field, respectively, indicate possibility of an even greater producing area.

West Texas recorded three other important developments: a two-mile northwest extension for Harper field of Ector County; promise of a two-mile southwest extension of Goldsmith field in the same county; and the lessening of the importance of the Ellenberger pay section of Ordovician in Sand Hills field through development of a second water well.

East Texas continues the busiest field in the world; 92 rigs are in operation and the drilling trend is upward. The field proper added 69 producers during the week.

Kansas opened four new pools and extended several others. Linking established pools and the westward migration of wildcatters may presage opening of many new Kansas fields. The state is headed for the most active winter drilling campaign of its history.

The Coal Basin area of Illinois, rapidly assuming market factor proportions, experienced substantial extensions to the Clay City field during the week and announced enough new work to assure considerable drilling there for the remainder of 1937 and all of 1938. One independent staked 100 locations. Three counties are involved in development of the field.

Pennsylvania's Rip Van Winkle sleep out of the limelight of national production affairs abruptly ended with completion of three "gushers" since August 24, each in a different part of the state. As producers there have been content to go after initials of five barrels per day, full credence may be put in their announced intention of wasting no time in getting busy in the three areas identified with the discoveries.

Gulf Coast events were about divided in interest between Texas and Louisiana. Wildcats in three Louisiana parishes loom as potential discovery wells, and new producing sands were uncovered at Charenton and Valentine fields. In Texas, Garwood and Hitchcock prospects may develop into new fields next week, while Friendswood, the newest field in the region, was extended again.

Southwest Texas recorded the first Austin chalk field discovered in Bastrop County and the probable linking of Loma Novia sand production in Labbe field with that of Seven Sisters field in Duval County. North Sweden, a new important field in this county, was extended 1¼ miles northwest and begins to look as though it might class Cockfield sand as one of the heaviest contributors to its output. A well completing at 7311 feet in Luby field opens the deepest sand in Nueces County.

Cotton Valley's lower Marine gas distillate pay was extended 1½ miles southwest by a 400-barrel well.

Market briefs

Outlook — Promising, with better crude control planned for September.

Crude Market—Pennsylvania prices cut; others unchanged.

Refined Oil Markets—Prices holding at previous levels.

CURRENT OPERATIONS

Week Ended	Daily Crude Production	Daily Crude Runs to Stills
August 28, 1937	*3,731,450	*3,425,000
Previous week	3,729,350	3,415,000
Year ago	3,032,050	3,050,000

CRUDE STOCKS

Date	Crude Oil (Barrels)
August 21	309,699,000
Week ago	308,737,000
Year ago	303,108,000

REFINED OIL STOCKS

Date	Gasoline (Barrels)	Gas & Fuel Oil (Barrels)
August 28	66,997,000	112,111,000
Week ago	67,260,000	110,493,000
Year ago	60,433,000	110,995,000

DRILLING

Period	Wells Completed
Past week	624
Previous week	541
Year ago	504
Year Total	
This year	* 19,538
Last year	16,404

*All time peak.

Technical Section

Revolving at high speed, the efficiency of a properly designed centrifugal pump is dependent upon the maintenance of close clearance between the rotor and case. Unless this is done, interstage leakage eats seriously into the output of the pump, and the bypassed fluid quickly cuts deeper and deeper channels. When this occurs it is but a question of time until unopposed centrifugal forces that are set up will wreck the rotor, if not the entire pump. Maintenance of this desirable condition is within the scope of every pump operator. Close and frequent inspections therefore become the most important factor in proper care of centrifugal pumps, which is the subject of an article starting on page 17.

The Texas-Louisiana Gulf Coast has become one of the world's great oil producing districts because of natural potentialities, and these same factors promise that it will continue to rank high for many, many years. Every indication points to a steady rate of discoveries during the next five years. Finding of extremely deep production, below 10,000 feet, has placed a new and higher value on the region. There are from 300 to 500 prospects of all classes that have been located but not tested, and the majority of these should be productive if past performances are maintained.

In water flood operations it is important to use the best spacing patterns and flooding practices. Considerable study must be given to this phase if the project is to be successful. Fairly uniform practices have been adopted by operators at Bradford, which should be of value to companies elsewhere. These are described on page 34.

A long pipe line bridge has been completed recently in the Salt Creek field of Wyoming for the purpose of providing gravity flow from the leases to the main system. Construction practices different from those employed on similar projects were used, and are described on page 44.

Oil in the Courts

Investigation of Mid-Continent anti-trust charges denied . . . Government witnesses' names not to be released in Madison trial until subpoenas issued.

CONTRARY to published reports, the Department of Justice is not investigating Mid-Continent operations with a view to filing anti-trust, it was made known last week. Meanwhile, preparations for the government's anti-trust suit at Madison was progressing. Last week, the defense in the latter suit was denied access to the list of government witnesses. These were the most important legal developments last week.

Mid-Continent trust study

Officials of the Department of Justice on September 3 denied reports, published in Texas, that they were investigating charges of violation of the anti-trust laws by Mid-Continent producers.

At the present time, it was indicated, active investigation of the oil industry is confined to the East, and no determination has been made of the area to be invaded after the New York situation is cleared up.

Officials of the department explained that conditions in Texas and the Mid-Continent area generally were studied by attorneys who were building up the Madison cases, but the matter was passed over at the time because it was not sufficiently related to the Wisconsin situation. However, it was said, the department has not closed its file, and should other developments occur that would give ground for further action, steps assuredly will be taken toward the bringing of proceedings against the concerns involved in complaints.

Not to release names

Federal Judge Patrick T. Stone has ordered that names of witnesses to be summoned by the government in its suit against major oil companies for alleged violation of the anti-trust law, to open in Madison, Wisconsin, on October 4, should not be made known to defense attorneys until after subpoenas have been issued.

Defense counsel made a demand for names of witnesses at a hearing held before Judge Stone August 3.

The court announced it would direct the jury commissioners to draw 50 names in addition to 26 now available for selection of a jury when the trial opens. Judge Stone said he was considering an order requiring that the jurors be kept together throughout the trial, which is expected to last from 6 to 12 weeks, in the custody of the United States marshal. They would be given permission to read only newspapers from which all references of the trial have been clipped. In the past it has been customary in this district to allow the jurors to remain at their hotels without guard.

Court officials are making arrangements to accommodate the large number of defendants, witnesses, attorneys, newspaper and trade journal correspondents who will be in the courtroom during the trial. The trial which opens in October will be on one of two indictments, and involves 24 major oil companies, 54 individuals, and 3 trade journals. Trial date for the second indictment has not been set.

Seek rehearing

Attorneys for Skelly Oil Company, August 31, filed motion for rehearing of the case against the company charging potentials taken at wells on its Park College lease, in the Fitts field, were illegal. The Oklahoma Corporation Commission last week issued an order ruling against Skelly. Arguments for rehearing will be held September 9. Refusal of the motion, it was reported would result in an appeal to the Oklahoma supreme court.

The order, which followed a four-day trial at Oklahoma City, reduced the potential on all wells producing from the Upper Simpson series 29.22 percent. Other wells on the lease, producing from the Hunton lime, were reduced 28.62 percent. The reduction in both zones becomes effective as of the date of the last actual flow potential. The company, however, is given the option of taking new potentials on any wells affected by the order.

Fifty percent of production from the lease will go to make up the overage on the lease, allegedly amounting to 425,000 barrels of oil.

Labor Situation

Unions eye office workers . . . NLRB authority suit going to Supreme Court . . . Fewer strikes.

LABOR naturally occupied a prominent position on the stage last week. The whole nation prepared to observe the Labor Day holiday.

Executives of oil companies and other corporations, as well as politicians, were awaiting with particular interest the scheduled radio speeches of several prominent leaders in the labor unions. It was expected that these speeches would reveal something of the plans of labor unions for the next several months.

Half-hour speeches were to be made by John L. Lewis, head of the Committee for Industrial Organization; Frank Morrison, secretary of the American Federation of Labor; and William Green, head of the A. F. of L.

From a less prominent labor union official, meanwhile, there has come a hint that the labor unions in the future may devote special efforts toward organizing white-collar workers. At Houston, Roy B. Sessions, vice president of the state C. I. O. organization in Texas and head of the local union of Oil Workers International Union, gave a talk before the Y. M. C. A. Young Men's Council. He discussed the American labor movement and the effect of that movement on white-collar workers. He said that the workers in this group offer a virgin field for labor organizations, and asserted that the pay of these workers is not as high, comparatively, as that of workers who are organized.

Case Moves Toward Supreme Court

Final determination through the courts of the authority of the National Labor Relations Board, administrator of the Wagner Labor Relations Act, last week approached a step nearer as a suit involving the new labor law appeared headed for the United States Supreme Court. In connection with litigation in the federal district court at Pittsburgh, the National Labor Relations Board defied a court order. The labor board issued an order controverting a court decree of the federal court, on the theory that the N. L. R. B. has exclusive jurisdiction over labor practices affecting interstate commerce.

Wage Controversy in Mexico

August 28 at Mexico City 16 United States and British oil companies that operate in Mexico set out to refute officially the assertion of a government-appointed board that the oil industry could afford to raise workers' wages approximately $7,000,000 yearly. Representatives of the oil companies offered documents, as a labor department hearing began, in an effort to show that the proposed wage increases would force them out of business in Mexico.

Strikes Fewer in U. S.

An analysis recently made by the National Industrial Conference Board indicates that industrial disputes have in general been less widespread in the United States than in other countries, except Canada and the Irish Free State.

The report indicated, however, that in the past 7 years considerably more workers were involved in strikes and lock-outs in the United States than in the preceding 7 years. Similar events

have occurred also in Belgium, France, and Spain. But the past 7 years have been characterized by fewer strikes and lock-outs than in the preceding 7 years in Canada, Czechoslovakia, Great Britain and Northern Ireland, the Irish Free State, Norway, Poland, and Sweden.

In the period from 1930 to 1936 an average of 61 persons per 10,000 population were involved in disputes in the United States, compared with 32 in Czechoslovakia, 25 in Canada, and 24 in the Irish Free State. Countries showing a considerably larger number of persons involved in labor disputes included Spain, with 194 persons per 10,000 population, Belgium with 170, France with 114, Poland with 84. In Great Britain and Northern Ireland the disputes compared closely with those in the United States, involving 63 persons per 10,000 population.

Proration Matters

Kansas adjusts Genesso decline . . . Oklahoma reduces most fields . . . Texas hearing set.

THE past week resulted in only a few proration activities, and these were of minor importance. All consisted of matters pertaining to specific producing fields.

Kansas actions

An order from the Kansas Corporation Commission last week made adjustment of the percent of decline in the establishment of potentials in the Geneseo pool of Rice County, application for the adjustment having been placed before the commission by Continental Oil Company. The order states "the new potentials so taken shall be adjusted as of July 1, 1937, on the basis of the Composite Withdrawal Decline Curve, established by this Commission on the 28th day of July, 1937; and that the wells in said pool shall be placed upon said curve at such adjusted potentials as of July 1, 1937." The Kansas potential composite withdrawal decline curve was discussed in THE OIL WEEKLY of August 9.

Field testing in the Burrton field of Reno County, Kansas, has been delayed on account of full lease tanks, according to E. J. Dahlgren, director of the conservation division, Kansas Corporation Commission. The tests are being taken to determine the gas-oil ratio of wells there.

Conservation Division Director E. G. Dahlgren of the Kansas Corporation Commission last week advised producers in the Edwards, Guldner, Rickard, Ploog, Haferman, Brandenstein, Bredfeldt and Orth pools in Rice County and the Stoltenberg and Stratman pools of Ellsworth County, that potentials would be started in these pools on or about September 7, in accordance with a recent order of the commission.

Texas meeting

The Texas Railroad Commission has announced the next statewide proration hearing will be in Austin September 20.

While no definite information is available now, it appeared most likely that the situation in East Texas would be the most important matter to be considered by the commission.

Should pressure continue to decline and that decline be accelerated, as it has been for the past two months, a drop of 20 or 25 pounds may result. Should this occur conditions in the field would be far more serious and operators would be more inclined to feel that some adjustment should be made immediately.

The Texas Railroad Commission postponed its hearing on the 5700-foot Saxet Frio sand. The meeting was scheduled for last Friday. When the hearing convened, operators pointed out that several deeper sands were faced with the same problem that confronted operators with wells in the 5700-foot pay. There are no spacing rules, nor is there established any method of allocation for these deep sands. Commission officials announced that a new notice would be issued which would include the 5700-foot sand and deeper horizons.

Oklahoma order

The Oklahoma Corporation Commission, in a detailed report issued last week, revealed all but one of the classified prorated areas in the state will go on reduced production during September. Greatest reduction is in Class "C" pools including Fitts Hunton, upper Simpson and Wilcox zones and Moore pool of Cleveland County, the drop amounting to 15,319 barrels of oil below the August allowable. Next was Class "A," the Oklahoma City Wilcox zone, dropping 14,484 barrels. Only increase was in Class "D," new pools and those in the early stages of development going into this classification. Production there stepped up 2275 barrels.

Production for August and September in the classified and unclassified prorated and the unprorated areas is as follows:

Classification—	August Allocation	September Allocation
Class "A" Pool (O. C. Wilcox)	128,000	113,516
Class "B" Pools (Greater Seminole)	137,100	134,707
Class "C" Pools (Fitts, Moore, etc.)	144,000	128,681
Class "D" Pools (Recently opened)	15,800	18,075
Unclassified Prorated Areas	45,500	42,021
Total Prorated Areas	470,400	437,000
Total Unprorated Areas	163,000	163,000
Total Oklahoma Production	633,400	600,000

Legislative Affairs

Special tax session called in Texas . . . More hearings before Pennsylvania report is written.

CALLING of a special session of the Texas Legislature for the purpose of raising state funds is of special interest to the oil industry in view of the governor looking toward natural resources as a taxable source. It also became known last week that Pennsylvania's legislative investigators of the oil industry had much additional ground to cover before preparing a report, indicating it would be next year before any final drafting of recommendations might be made.

Special tax session

A special session of the Texas Legislature to consider increases in state revenues has been called for September 27 by Governor James V. Allred. The governor indicated that he will submit no other subject until the Legislature has raised taxes for the pension fund and other funds which now have deficits. Allred has been irritated by statements from members of the Legislature in which they have insisted that no new revenues are needed. He has indicated that he believes one source of revenue should be an increase in the taxes on natural resources. The session promises to be one of the bitterest in years. Many of the member are opposed to any tax increases now because they must account for it next year when election campaigns are on.

Further investigation

Further hearings will be held by Pennsylvania's legislative committee named to investigate the oil industry, according to Judge Ralph H. Smith, Pittsburgh, who said the marketing side of the industry was to be studied further. The committee will probably sit in Scranton, Wilkes-Barre, Johnstown, and in Washington and Beaver counties.

In the event the governor calls a special session of the legislature next year, the committee will have only a preliminary report ready, Judge Smith declared.

New Allowables Improve Outlook

Proration schedules indicate that crude oil production in September will be closely balanced with demand . . . Meanwhile, the industry has the advantage of a favorable inventory position.

By L. J. LOGAN
Associate Editor

THE unusually strict control of crude oil production that is scheduled for this month eclipses most of the other factors in the current situation in the industry, and the outlook consequently is exceptionally favorable.

Under the allowables that the leading producing states have prescribed for September, crude production likely will be balanced closely with market demand, and the additions to crude storage that were resumed in August again will be largely or wholly eliminated. It appears possible, indeed, that production will be sufficiently low to permit withdrawal of some crude from storage.

Best Control This Year

The six leading producing states, which account for about 92 percent of the total United States crude oil production, have in effect for September the strictest program of state allowables for any month this year.

The allowables of the six states for September total 3,260,329 barrels daily, which is only 25,729 barrels or 0.8 percent more than the combined market demand for the states as estimated by the Bureau of Mines.

Close Balancing Indicated

These figures indicate that crude production in September will closely conform with market demand, and that crude stocks consequently are likely to remain about stationary.

Although unusually strict, the September program of allowables is only a little stricter than the schedules of June and July, this year. In June the allowables of the six leading states were within 29,412 barrels or 0.9 percent of the Bureau of Mines recommendations; and in July the state allowables exceeded the indicated demand only 34,926 barrels daily or 1.1 percent.

The strict allowables of those two months resulted in very effective balancing of crude production with market demand. In June the stocks of crude oil in the United States showed only a small fluctuation, a net increase of 579,000 barrels. In July the crude stocks again were almost stationary, showing a net decrease of 538,000 barrels. For the two months as a whole the crude stocks therefore were practically unchanged.

Relapse in August

The leading producing states, particularly Texas, loosened the production restraints in August, however, and crude oil storage consequently began to increase again. The six leading states for August had allowables 124,141 barrels a day, or 3.9 percent higher than the demand as estimated by the federal government.

The full effect of the comparatively lax allowables of August is not yet discernible, as official figures on crude storage are not available for the latter part of that month. However, it appears certain that a substantial addition to the crude stocks occurred within the month. From the beginning of August to August 21 the crude stocks expanded 1,449,000 barrels, rising to 309,699,000 barrels. For the remainder of the month a further substantial increase is indicated, in view of the fact crude production was running around all-time peak levels.

States Cooperate

The comparatively strict program of allowables for September reflects noteworthy cooperation among the various states, and it is featured by increased strictness of control in Oklahoma and Texas.

Oklahoma's September allowable is less than the Bureau of Mines estimate of market demand, as the state apparently proposes to compensate for some excesses of production in preceding months.

Kansas and California adopted the Bureau of Mines recommendations in fixing their state allowables, as they and Oklahoma had done in August.

Texas tightened its restrictions for September, setting the state allowable only 29,134 barrels a day or 2.1 percent above the bureau estimate of demand, whereas in August the state exceeded its allocation 100,291 barrels daily, or 7.2 percent.

New Mexico continues to show a larger excess of state allowable over indicated demand than any other state, the allowable for September being 12,600 barrels a day or 12.4 percent above the recommendation. That excess is only a little less than for August.

Louisiana became a little more lenient than before in fixing September allowables, exceeding the Bureau of Mines estimate of de-

Effect of State Allowables on Crude Stocks

MONTH	Bureau Forecast of of Demand	†Daily Allowable for 6 Leading States	Excess of State Allowables		Stocks at End of Month	Stock Change in Month
			Barrels	Percent		
1937:						
January	2,770,700	2,882,181	111,481	4.0	288,184,000	— 1,425,000
February	2,835,300	2,983,596	148,296	5.2	289,972,000	+ 3,213,000
March	2,924,400	3,096,142	171,742	5.8	297,496,000	+ 7,524,000
April	3,006,600	3,081,699	75,099	2.5	304,161,000	+ 6,665,000
May	3,083,100	3,179,836	96,736	3.1	308,209,000	+ 4,048,000
June	3,109,900	3,139,312	29,412	0.9	308,788,000	+ 579,000
July	3,159,700	3,194,628	34,926	1.1	308,250,000	— 538,000
August	3,196,600	3,320,741	124,141	3 9	*309,699,000	+*1,449,000
September	3,234,600	3,260,329	25,729	0.8	.....	.....

* Latest available figure is for week ended August 21.
† The 6 leading producing states are: California, Kansas, Louisiana, New Mexico, Oklahoma, and Texas.

Excesses of State Allowables Over Bureau of Mines Estimates of Demand

(Barrels Daily)

MONTH AND STATE	Bureau of Mines Recommendation	State Allowable Beginning of Month	Excess of State Allowable	Percent Excess
August, 1937:				
California	612,800	612,800	.....	....
Kansas	200,500	200,500	.....	....
Louisiana	253,900	264,550	10,650	4.2
New Mexico	100,800	114,000	13,200	13.1
Oklahoma	633,400	633,400	.....	....
Texas	1,395,200	1,495,491	100,291	7.2
Total six States	3,196,600	3,320,741	124,141	3.9
Total Nation	3,462,900	.....	.....	....
September, 1937:				
California	638,200	638,200	.....	....
Kansas	200,900	200,900	.....	....
Louisiana	247,900	265,495	17,595	7.0
New Mexico	101,400	114,000	12,600	12.4
Oklahoma	633,600	600,000	*33,600	*5.3
Texas	1,412,600	1,441,734	29,134	2.1
Total six States	3,234,600	3,260,329	25,729	0.8
Total Nation	3,509,300	.....	.....	....

* State allowable below Bureau of Mines allocation.

mand 17,595 barrels a day or 7 percent. In August the state's excess was 10,650 barrels daily or 4.2 percent.

Inventory Position Strong

While the prospect for effective balancing of crude production with demand until October 1 is temporarily encouraging, the current situation is characterized, moreover, by an exceptional fundamental soundness, particularly as regards inventories.

Although August has brought some additions to crude oil storage, under the comparatively lax allowables in the leading producing states during the month, the stocks of crude oil in the United States nevertheless continue moderate.

The total of 309,699,000 barrels of crude on hand August 21 was about 6,500,000 barrels or 2 percent larger than the inventories held on the comparable date last year.

This increase in crude stocks within the year has not been as great, however, as the gain that has occurred in petroleum consumption. So far this year, petroleum demand has been running about 11 percent higher than last year.

Gasoline Storage Needed

Present inventories of refined products, similarly, are at economic levels.

In the week ended August 28 total gasoline stocks were reduced further by 263,000 barrels, declining to 66,997,000 barrels. At the latter level, the gasoline stocks were about 11 percent greater than the supplies held on the corresponding date a year ago. This increase in gasoline stocks over a year ago is largely justified by the accompanying gain in consumption. The Bureau of Mines showed that for the first six months of this year the gasoline demand in the United States was 10 percent higher than in the similar period. The bureau has estimated, moreover, that for September, the demand for gasoline will be 10 percent greater than that of September last year.

The decline of 263,000 barrels in gasoline stocks in the week ended August 28 was somewhat smaller than normal for the time of the year, and contrasted with decreases around a million barrels a week in recent weeks.

Refinery Operations Excessive

The relatively small withdrawal from gasoline stocks in the week of August 28 probably may be blamed, however, on the excessive crude oil production recently prevailing and on the fact that the refineries tended to operate excessively, in conformity with the heavy output of the wells. The comparatively small decline in gasoline stocks occurred in a week when refinery operations were back up to the same level as the all-time record that was set in the week ended July 31, crude runs to stills having averaged 3,425,000 barrels daily.

Fuel Market Strong

Inventories of fuel oil are especially conducive to strong markets, being comparatively small, in relation to the heavy demand. This inventory situation explains why fuel oil prices are good, following improvement in recent months.

In the week ended August 28 the total stocks of gas oil and fuel oil were increased 1,618,000 barrels, as the industry proceeded with building up of the inventories, in preparation for heavy fall and winter demand. The total supplies, with that addition, amounted to 112,-111,000 barrels.

At that level, the fuel stocks were 1,116,000 barrels larger than one year previously. But in contrast with that slight increase in the stocks within the year, fuel oil consumption has been running this year more than 10 percent higher than last year.

Large Demand Is Boon

The demand for petroleum this year has been exceeding all previous records, with not only gasoline and fuel oil, but also most of the other products showing substantial increases in use this year compared with last year. The consumption of lubricants, for example, has been running about 10 percent larger this year than last year, reflecting increased general industrial activity as well as more motoring. Asphalt demand is up materially, reflecting increased construction work; and road oil use has expanded. Kerosene consumption also has increased some.

The unprecedented consumption of petroleum and petroleum products has been the most important factor contributing to the exceptionally profitable operations of the oil companies this year. The large consumption has not only promoted record volumes of business for the oil concerns, but it also has promoted stable markets and favorable prices, by making relatively easy the balancing of production with market requirements. The large demand thus has caused large volumes of business and profitable prices, the combination needed for achieving good earnings.

Earnings Are Good

The earnings of the oil companies as a group are running this year around 50 percent higher than last year, and for the year as a whole probably will show a similar improvement; indicating that in 1937 the industry will about duplicate the profits of 1929, the best on record.

So far, there are no indications that these good results of 1937 will be interrupted in 1938.

Geologists Discuss Varied Topics At Moscow Meeting

By DAVID L. WOSK, Geologist

EVERY phase of the origin, accumulation and occurrence of oil was taken up at the various sectional meetings of the seventeenth International Geological Congress in Moscow. Most of the papers were presented by Soviet geologists, dealing with Soviet problems. Unfortunately, the translations in this section were such that a complete understanding of the problems discussed could not be obtained. The short time allotted for discussion also precluded a thorough understanding of the complex problems.

Question Bilibin's Method

V. V. Bilibin presented an interesting paper on "Methods of Estimating Subterranean Oil Reserves," published in full in The Oil Weekly of April 27, June 1, and June 15, 1936, using the same classification used by I. M. Goubkin in the presentation previously discussed. The method is known in the U. S. S. R. as the Bilibin method. Many objections were raised as to the validity of this method, especially by the American representatives who pointed out that production decline curves could be used only on old wells producing at capacity, or if on new wells only by analogy after the initial production had been determined. Any other method, they contended, gave only a very rough approximation of reserves, which could in no way allow them to be counted as proven reserves. It was conceded that the Soviet geologists had made a start on the problem by raising the issue in a concrete manner, and it is hoped that some permanent commission may be set up to solve this problem on a world-wide basis if possible.

Thomas on U. S. Reserves

The only other paper on reserves was read by J. Elmer Thomas of the United States. He estimated the reserves (proven as the term is used in the United States) as disclosed by the A. P. I. at 13,063,000,000 barrels, but suggested that 15,000,000,000 barrels might be more nearly correct.

While the figures do not check exactly with those given by Goubkin for the United States (See The Oil Weekly of August 23, 1937), they are very close. Thomas clearly pointed out that his estimate of reserves did not include known untested structures near those now producing, deeper beds potentially productive, enlarged yields by improved operations, oil shale deposits, derivatives from hydrogenation of coals.

Thomas commented as follows on the possibility of estimating world reserves on any comparative basis:

Not Practicable

"As to the untested potentialities of probable or possible territory, even with any well considered measuring stick of arbitrary, mechanical or mathematical formulae, the human element nevertheless would introduce such variable factors that a ready comparison between districts, between states or countries, would be somewhat questionable. Possibly if a group of men equally well informed upon the geology, the geophysics and the petroleum engineering of all areas in all countries were able to devote their time to the problem of estimating the petroleum reserves of the world, comparable re-

Classification of Oil Deposits Based on Their Shape

Group	Sub Group	Division	Sub Division	Character of Deposit	Structural Characteristics	Example
Bedded Deposits. Connected with reservoirs bedded thru-out oil Area.	**Closed Deposits.** Where oil and gas Saturation completely surrounded by Edge Water.			**Under Pressure:** Characterized by either Hydraulic or Volumetric region	**Domes and Brachi-anticlines**	**October Region.**
				Low or Without Pressure: Volumetric or Gas Capillary region.	Domes and Brachi-anticlines. Have ring-like form encircling arch.	Grozny Brachi-anticline.
	Due to Screen (Surface of rocks with low porosity) which stopped oil and gas migration.	**Techtonic or Peaked.** Screen due to techtonic disruptions. Resemble peak of cup.	Portion Raised along faults **Upthrown Deposits.**	Screened deposits under pressure. Hydraulic or volumetric region.	Monoclines and anticlines.	Upthrow Monocline deposits.
			Portion of structure under fault or overthrust.			Under-thrown Monoclinal deposits. Lower Kangan sand stones. Malgobek.
		Stratigraphical deposits. Screen is result of overlapping of an Oil stratum.				Lower Maikop.
	Hanging deposits. Small pressure due to which oil movement was stopped.			All hanging deposits are under low or no pressure.	Monoclines or in limbs of Anticlines.	Recumbent Vosnesenka anticline.
Irregular Deposits. Where oil distribution depends on reservoir shape.	Wedged out beds.			Gas capillary region. Condition of contact with deposits under Volumetric or Hydraulic region established.	Deposits confined to Anticlinal folds and Monoclines.	Old Grozny and North East Caucasus
	Lenticular deposits.					Malgobek.
	Shoestring deposits.					

Producing regions and prospects of U. S. S. R.

sults for the various nations might be obtained. But perhaps there exists no such group of men."

Brod on "Classification"

An interesting paper on the "Classification of Oil Deposits Based on Their Shape" was presented by I. O. Brod, Soviet geologist, with special reference to the fields of the North-Eastern Caucasus (Grozny and Daghestan). The table on page 15 demonstrates the proposed classification.

Brod notes that in the Malgobek and Voznessenka areas, the depths of wells range from 400 to 1300 meters, and the daily production per well usually from 10 to 60 tons. Wells sometimes range up to 200 tons.

22 Oil Horizons

In the Grozny area, which Brod refers to as the Grozny Brachi anticlines which constitute a part of the Sunja anticlinorium, the number of oil horizons equals 22. Ninety percent of the total production (46 million tons) is obtained from four horizons characterized by hydraulic control. The depth of wells ranges from 500 to 1100 meters. In the old Grozny region, in spite of a larger area, a total production of only 79,000,000 tons has been reached, the depth of wells there being from 400 to 1000 meters. In the old Grozny region, the screened deposits from underthrust parts at depths ranging from 1200 to 2000 meters have recently been put into exploitation. This paper brought considerable comment on the part of the Soviet geologists.

There were many papers presented on the origin of oil, considerable evidence being advanced to show several different possible origins. The most commonly accepted and best developed thesis indicated oil as being a derivative of plant and animal remains, the change taking place by various means including radio-activity.

"Oil Field Waters"—Maleyshek

An interesting paper, thoroughly discussing oil field waters, was presented by V. T. Malyshek, Soviet geologist. The outstanding features of his article are as follows:

"The indications of commercial oil are: a certain disappearance of sulphates in oil waters, a regular decrease of sulphates in sedimentary rocks by approaching the oil bed, and an extreme increase of bed waters alkalinity. Individual exceptions are possible because of the sulpho-bacterian presence in the waters. Deep metamorphization of "silt" waters, with the presence of organic substance and vitality of anaerobic bacteria, chiefly reducing the sulphates, leads to the formation of alkaline bed waters. These facts are of an exceptional significance for the processes of oil formation as well.

"Characteristic shows of commercial oil are the presence of ammonium chloride in hard waters and usually ammonium carbonate in alkaline waters, discovered in all the oil bed waters. Ammonium salts have been discovered in all the waters of mud volcanoes. The content of borax in alkaline oil waters and mud volcano waters is higher than in the hard waters."

Mud Volcanoes of U. S. S. R.

The paper that drew the most comment from the Russian geologists was one delivered by I. M. Goubkin and S. F. Federov, titled "The Mud Volcanoes of U. S. S. R. and Their Relation to the Genesis of Oil Felds." It was pointed out that the geographical distribution of mud volcanoes is confined chiefly to the zones of plunging of the Main Caucasus Range as well as to the zone of plunging of the Crimean Range eastward. A very definite connection between mud volcanoes and the tectonic forms of oil regions was established as follows: "The mud volcanoes of Azerbaijanian, Kerch, Taman, Kuban and Georgian S. S. R. are connected with anticlinal folds of the diapir type. The "synclinal" volcanoes of Azerbaijan are also confined anticlinal zones, complicated, however, by local downfolds."

It was further pointed out that the gases of the mud volcanoes consisted largely of methane (up to 98 percent) with an admixture of nitrogen and carbon dioxide. Further developing the thesis of the connection between mud volcanoes and oil production, Dr. Goubkin said: "In the muds of the mud volcanoes there lives an active anaerobous microflora very badly or not developing in the presence of air. The quantity of bacteria in the mud is as great as in recent deep waters ooze. The microflora of mud volcanoes resembles that of the oil fields of the corresponding regions."

Fields of Azerbaijan

K. A. Mashkovich presented an interesting paper on the oil fields of Azerbaijanian S. S. R. The most interesting points developed in this paper were as follows:

1. The production has grown from 7,627,000 tons in 1913 and 2,915,000 tons in 1920 (the date of the Sovietization of Azerbaijan) to 20,557,000 tons in 1936.

2. Geophysical methods are now widely used and have proved to be ex-

[*See Moscow Meeting, Page 60*]

Fourteenth Article of a Series

Prolonging the Life of Centrifugal Pumps

By ELTON STERRETT, Engineer

CLOSE inspection to prevent the setting up of forces that may quickly wreck such high-speed machines, most important factor in proper care of centrifugal pumps.

WITH the development of the multi-stage centrifugal pump, this machine, formerly used only against low heads and where power cost was secondary, has become an important means of handling large volumes of crude and the many fluid products derived from petroleum against heads equalling those reached by other types of pumps in like service. But, despite this wide adoption of the pump, it is regarded by many operators much as is the transformer in their electrical equipment—something to be used as long as it will "put out," and then to be replaced, junked, or shipped to the factory for reconditioning.

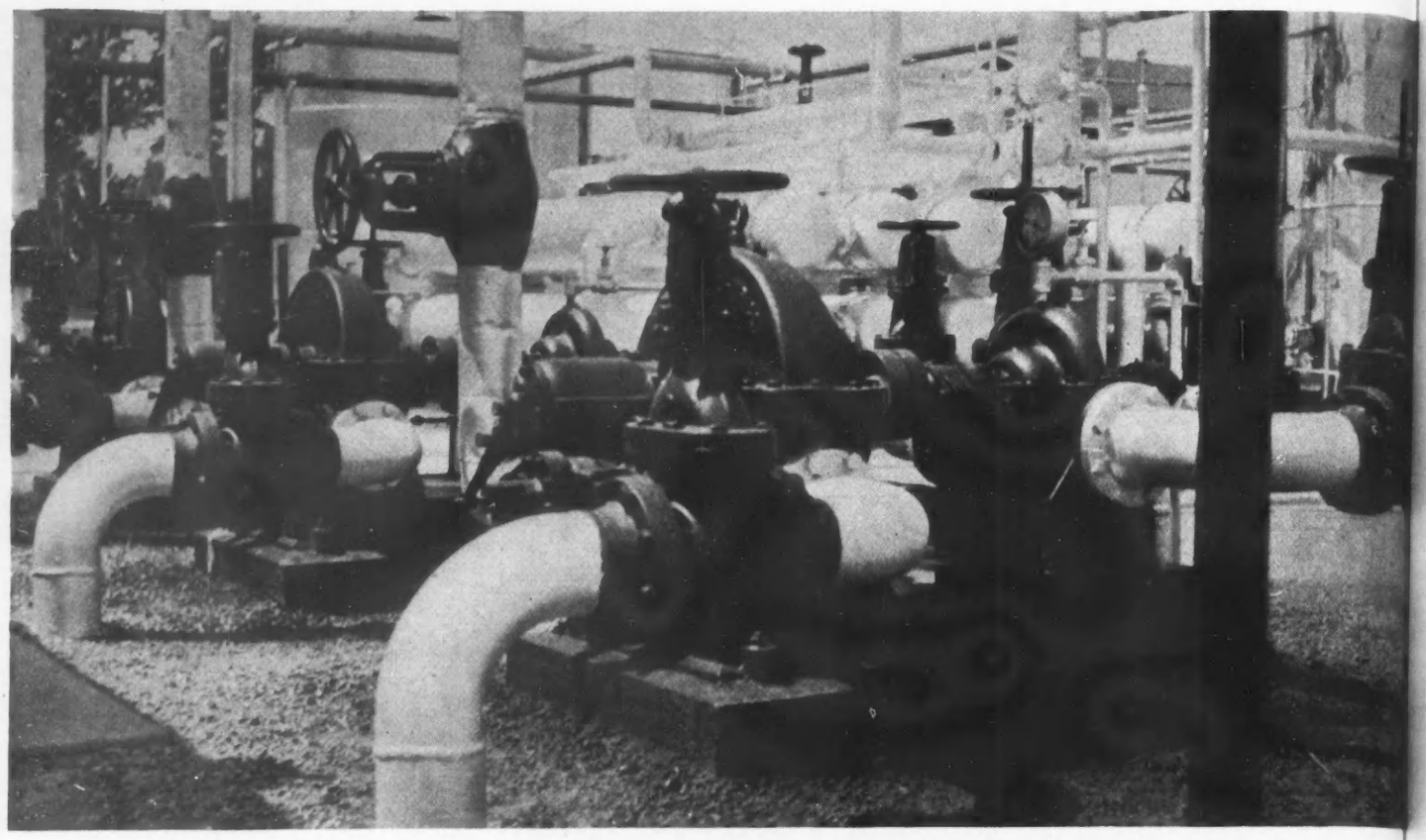
Revolving at high speed, the efficiency of a properly designed pump is dependent upon the provision and maintenance of close clearances between rotor and case, as without this provision interstage leakage eats seriously into the output of the pump, and this same by-passed fluid quickly cuts deeper and deeper channels for itself, still further reducing the useful output of the pump, and frequently causing it to lose its perfect balance. When this occurs it is but a question of time until the unopposed centrifugal forces set up will wreck the rotor, if not the entire pump.

Maintenance of this desirable condition is within the scope of every pump operator, and need not be held over until the periodic visit of the factory man, or until he is summoned when breakdown is imminent. Clearance between shaft and impeller rings must be checked frequently and not permitted to exceed that specified by the various pump makers. One manufacturer sets a limit of 0.015 inch as being the clearance which should call for prompt replacement of rings if, upon measuring by micrometer, they show the wear to have been in them, or the impellers if these members have been abraded unduly.

Records of 40 consecutive pump examinations show only one case of impeller wear at the joint between it and the ring sufficient to demand replacement; 17 impellers were discarded for channelling, chafing against insufficient end clearance and other defects, while in the other 22 cases the wear was localized in the rings. This is to be expected, as the rings are held stationary within the case, and are neither able to adjust themselves nor to distribute wear around the entire area subject to wear as are the impellers.

Checking Clearance

Checking of clearance between shaft and impeller rings is difficult under ordinary methods of measuring, but may be determined by removing the plugs or relief cocks usually positioned in the upper half of the pump case over each impeller;



Double Sweeps, with minimum friction loss, relieve these centrifugals of expansion and line load stresses and curb amplification of vibration.

then checking the shaft in normal rotating position with a micrometer; after which a dial indicator is set so that the extension on its plunger extends down into the case through the plug hole, resting firmly across the impeller. This done, by removing the end bearing, it is possible to raise on the shaft enough to bring impeller and ring into contact without danger of springing the shaft. The reading on the dial indicates the vertical clearance between impeller and ring; or this value may be determined by removing bearing and permitting the shaft to drop into contact with the impeller ring and then raised until contact is again made when the total sweep of the indicator hand is, of course, the sum of both upper and lower clearances.

Bearings Wear Horizontally

Since bearing wear in a perfectly aligned centrifugal pump is rarely in the direction of gravitational pull, but in the majority of pumps is toward the intake at the end of the low pressure stage and away from the discharge on the high pressure end, the direction of greatest wear is nearly always horizontal, especially in those pumps where suction and discharge apertures are cast into the lower half of the pump casing and are arranged on opposite sides thereof.

The bearing wear directly affects the clearance between impellers and guide rings, and as the bearings, whether of bronze or of double-race ball or roller type, are non-adjustable, they should be replaced as soon as undue wear is apparent.

Wear of the bearing at the driven end of the pump—usually the low stage end—is nearly always greater than at the other end, due to the greater difficulty of attaining and maintaining perfect rotating balance at this point. The flexible coupling should never be expected to compensate for even a slight misalignment of shafts, and even when power unit and centrifugal are furnished by the pump maker mounted on and doweled to a common base, the shafts should be carefully checked for initial alignment and this relation again investigated if the pump does not run without vibration.

Whether the drive is through reduction gear from an engine or direct-connected to steam turbine or electric motor, it will be found on inspection that in the majority of instances there are paper shims or even metal "dutchmen" under one or more legs of the driving element. Even if the pumping unit be shipped without these necessary aids to alignment, it is extremely rare that the average erection gang can set up, bolt down, and grout in a cast-iron base without introducing stresses and distortion in that base sufficient to demand shimming under at least one of the legs of the driver.

Especially after an electric motor has been removed for overhaul, rewinding or any other servicing, this matter of exact shaft alignment should be watched, as paper shims have a way of disappearing and being overlooked upon replacement of the motor.

Where a step-up gearing is used between a relatively slowly turning engine and the pump, the original setting of the centrifugal may be made without shimming or provision therefor, assuming that it is accurately matched with its base by the manufacturer, but allowance must be made for realignment of the gear unit as shaft wear occurs, to enable the desired straight line lay-out of pump and driving shafts to be maintained. Where paper shims are used for such service, coating one side with clear shellac just before plac-

ing will simplify replacement of the unit and cut down the amount of trial shimming otherwise required to regain original accuracy of setting.

Should Check Couplings

Checking of many installations proves that where the drive, as with many smaller centrifugals, is through any of the various pin-and-socket types of flexible coupling, the ends of these pins tend to wear slightly conical or tapered in service, and when this condition is severe they may exert a longitudinal pressure against the pump shaft which will upset the hydraulic balance of the unit and cause undue wear of bearings and possibly even contact between rotor and case.

If the flexible coupling is of the laminated type, it is advisable to dismantle it at the usual overhaul periods and check the discs carefully. Under driving load, even though the elastic limit of the material may not even be approached, repeated alternated flexures tend to harden the material, and may transform the discs from units transmitting torque only into a set of stiff springs which may force the pump shaft far enough from its proper zone of rotation to cause rubbing and consequent rapid wear.

Where the discs show signs of having become tempered by service, or where they will not lie flat when removed from a coupling, they should be replaced by new parts, as they are usually too thin to be normalized by any means available to the average pump operator.

Balance Is Necessary

Maintenance of rotating balance is imperative if a centrifugal pump is to endure; the speeds at which rotors normally turn building up the effect of even a relatively slight weight into a pull ample to distort a shaft, causing whipping or weaving between bearings and setting up vibrations quickly causing complete wrecking of the unit. For this reason a pump which has been down for some time must be carefully watched upon restarting, as paraffin or other foreign matter may have collected in an impeller and formed a mass which does not throw free as the pump comes up to speed.

Even as small an amount as one half ounce of material, concentrated in one spot on the periphery of an impeller twelve inches in diameter and turning up 3600 revolutions per minute can set up a distorting force of 7.62 pounds, acting outwardly at the point of concentration. This stress, although seemingly large for such a small unbalanced weight, is computed by the following formula, applicable to any given pump with data to correspond with its operating conditions:

$$F = \frac{w\pi^2N^2r}{900g}$$

where

w is the weight in lbs. (½ oz. equals 0.032 lbs.)
N is the revolution per minute or 3600
r is the radius of gyration, being 6″ or 0.5′
g is 32.2
π is 3.1416

in this particular instance, and whence the value quoted above is derived.

Cleaning Passages

At the time of overhaul or periodic checking of a pump for suspected partial clogging or choking of the fluid passages care should be taken to clear away any paraffin or other foreign matter adhering to the impeller, but this surface should not be cleaned with a hacksaw blade, file or tempered bearing scraper. If, as sometimes happens when a pump has been allowed to stand with the body partially filled with water, a line of rust is formed at the junction between oil and water, this rust should be cleared away with a fine grade of emery cloth on a rounded stick—not scraped off, as this act may result in scoring the impeller and possibly setting up a graved line along which fracture may start or vibrations form a node of crystalization.

There is also the danger of roughening the carefully formed working surface of the impeller, if a hardened tool be used for cleaning, and thus impairing the efficiency of the unit. If the pump and its driver be rotated by hand at frequent intervals during the down time, formation of rust rings or of accretions of paraffin within the impellers is greatly retarded or entirely prevented. This rotation of the pump should be sufficient to insure spreading of a new film of lubricant in all bearings, and when this is attained the motion is certain to have been enough to break up any settling which may have begun within the pump chamber.

Inspection Programs

The time allowed to elapse between these scheduled rotations of stand-by or infrequently used centrifugal pumps varies from the daily routine specified by a few companies to a fortnightly operation by the master mechanic, which must be entered on the station log at the time it is carried out.

Regardless of the type of oil being handled by the pump, the upper half of the case should be lifted and the pump carefully inspected for possible wear or other defect at intervals of from three to six months, depending upon the pressures put up, working temperatures and relative cleanliness or contamination of the fluid being handled.

Apart from searching for possible clogging of the narrow passages within the impellers, inspection should bring out any unusually bright spots on any portion of either impellers, guide rings or fluid passages within the case. Any localized polish is indicative of concentrated flow directed against that spot, and may be caused by excessive leakage between stages. Frequently this leakage is first noticed when the flow between impeller and guide ring gives high polish to the impeller at this zone of normally close clearance; as under proper operating conditions there is a slight tendency for the incoming flow to eddy here and favor a slight darkening or staining of the metal rather than the contrary.

Pulsation Reactions

Centrifugal pumps are frequently connected into a manifold with plunger pumps, the idea being that the centrifugals will "fill in" the intervals between maximum plunger deliveries and tend to iron out or at least reduce the range of pressure variations. Although centrifugals will do this, the uneven, pulsating discharge head imposes a severe strain on the pumps and may result in impeller, guide ring or bearing wear long before this factor would become apparent were the same pumps being used against like line pressures without the added duty of acting as surge chambers.

Tying centrifugals in with plunger pumps on the discharge side is not as severe a test of centrifugal endurance as is the same teaming when the two types of pumps draw from a common, and not overly large, suction line. Centrifugal output is closely related to suction pressure and any fluctuation at that point, especially if the flow pressure drops almost to atmospheric, results in only partial filling of the pump cavities, with consequent formation of gas from the oil, and an erratic operating characteristic of the pump which soon shows in overloaded bearings and rapid wear.

Where centrifugals and plunger

pumps must be operated in parallel, the provision of adequate and constantly charged air chambers on both suction and discharge lines will eliminate most of the undesirable pulsation. If the two types must be compounded, the centrifugal should preferably be used as the lower pressure stage, unless a suction lift must be maintained, in which case the plunger pump is apt to prove the more satisfactory as the primary unit. If these pumps are compounded in either manner, the air chamber between the units should have an air or free working space, under maximum pressure, equal to or greater than twice the displacement of one plunger through its working stroke.

Since the running of a combination of both types of pumps results from design and construction features over which the operator has no control, it is well for him to realize that such a linkage of pumps always imposes greater than normal loads on centrifugals, and the usual inspections should be scheduled at more frequent intervals than would be the case were either type run alone. One major company utilizing both types of pumps on a common manifold orders a thorough inspection of all centrifugals after 90 days of operation as against a six months' basis for the same time of pump working alone.

Occasionally the various factors involved in pump operation combine unfavorably to introduce serious periodic pulsations in a centrifugal. On one such drive the deviation from theoretical rotating speed, while not evident by any of the usual testing methods, resulted in a 4.5 percent loss of throughput, as was discovered when the same pump was temporarily hooked up for electric motor drive after the slow speed Diesel formerly driving it had been wrecked. Although the speed of the pump in both instances was the same, according to the most accurate checking possible with speed recorders, the throughput in the line increased almost 40 barrels per hour—a gain which could be ascribed only to more uniform rotation of the centrifugal impellers and consequent more steady flow of oil into and from the pump.

Of interest in connection with this same unit was the installation of a generator to be driven by the Diesel after rebuilding, with the consequent continuance of electric drive for the pump. With this new hook-up the monthly throughput of the pipe line consistently averaged higher than under the original drive conditions and the power input, as computed from fuel used by the Diesel, was cut nine percent — representing an unusually high power loss in the over-drive gearing, but pointing to this as a possible cause of earlier poor pump performance.

Vibration Detection

Many centrifugal pump installations run quietly and without appreciable vibration when first installed, the presence of easily detected vibration being the engineer's most infallible warning of pump wear or the intrusion of factors detrimental to best service. One main line using centrifugals in pairs to put up a manifold pressure of 750 pounds per square inch, handling East Texas crude, noticed that the pumps vibrated excessively during the summer months, but that there was no appreciable disturbance during cold weather. This was the exact opposite of what might have been expected, as the warm oil in summer offered much less resistance to flow through the comparatively restricted spaces in the pump than did the same liquid when pumped at a suction manifold temperature as low as 44° F.

As the oil was drawn through heat exchangers during the summer to eke out the supply of cooling water for the Diesels generating the power for the motors driving the centrifugals, the crude was delivered at the pumps with a seasonal temperature range of approximately 80 degrees Centigrade (144° F.) and it was conjectured that this excessive heating during the summer might result in the liberation of or generation of gas from the oil, with consequent gas lock or partial reduction of the effective suction area within the pump.

To check this condition, the heat exchangers were operated with cold water instead of the run-off from the engines, and the vibration ceased. When a prolonged drouth necessitated the tying in again of the incoming oil to lower cooling water temperatures, the vibration again became all too evident at the pump.

Notwithstanding the apparently plain proof of the theory of gas intrusion, the chief engineer made a careful check-up of all other factors which might affect pump operation, and the correct solution found in the manner of hooking up the pumps for compounding.

The foundations of the two pumps had been offset with respect to each other so as to give a straight line flow from the discharge of the low-pressure unit into the suction of the high-pressure pump. This connection undoubtedly attaining the desirable condition of minimum friction loss. And, during cold weather or with oil at normal temperatures, no other factor affected this straight section of pipe to introduce operating difficulties.

But, when oil from the exchangers was flowed through this connecting line, 14 feet 4 inches in length, the expansion of the pipe under increased temperature exerted a powerful push against both pumps, tending to force them farther apart and, when this motion was restrained by the grout and the foundation bolts, applying a serious distorting force to both pump casings.

That this expansion was not a negligible quantity is easily demonstrated by calculating the theoretical amount of elongation to be anticipated in the pipe between extremes of operating temperatures. Assuming a temperature spread of 80° C., and a linear expansion coefficient of 0.000015, for a length of pipe equal to that connecting the two pumps, we may substitute in the formula

$$I = K(T - t)L$$

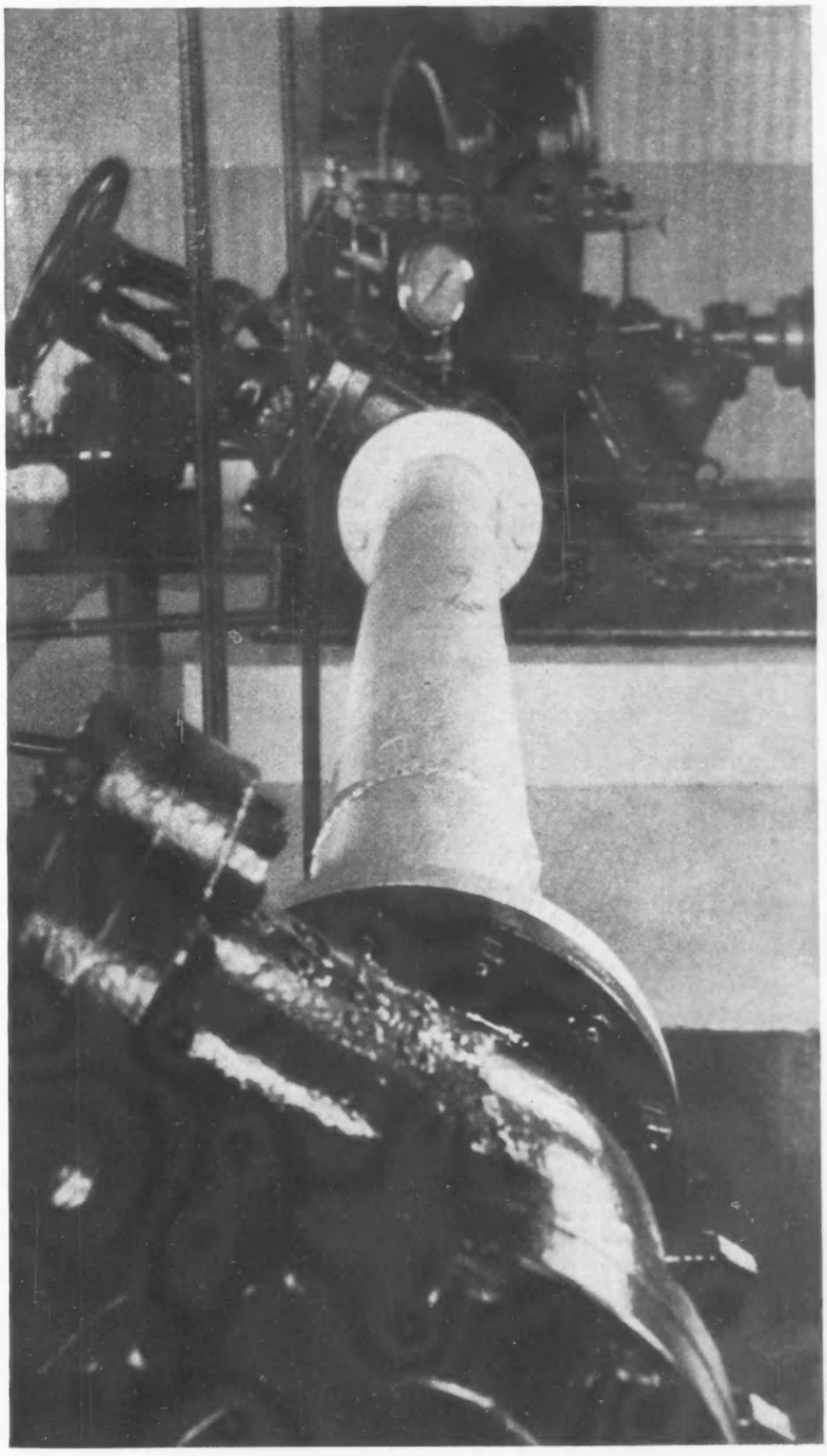
where K equals 0.000015
$(T - t)$ equals 80
L equals 14′ 4″ equals 172″
then $I = 0.000015 \times 80 \times 172 = 0.2064$″

practically all which was available as distorting force in this particular installation, as the original set-up was made in December and the tie-in section, fabricated by welding on the job, was a force fit between pump flanges even then. A portion of the expansion thrust was, of course, absorbed by the gaskets in the six flange joints between the two pumps; but as these were pulled tight during erection of the units and the two pump bases grouted in, there was insufficient elasticity to take up all of the expansion force and the excessive vibration consequently became apparent as soon as the temperature rise was sufficient to generate the unbalanced force.

The condition was corrected by replacing one of the swage nipples and its corresponding flange with an expansion joint, after which the puzzling and dangerous vibration was never noted, despite the continued use of the heat exchanger and delivery of oil to the first pump at a suction line temperature deliberately boosted 10° C. above the highest formerly run when the vibration was apparent.

Casing Fractures

Connection of heavy suction or discharge lines, often carrying high-



A straight tie-in such as this, unsupported and rigid, imposes load and expansion stresses beyond those designed into pump castings.

pressure gate valves in addition to pipe weight, directly to the pump flanges without provision of some adequate support for this additional load is frequently the cause of pump casing fracture. The length of unsupported pipe, bolted tightly to the pump at time of installation, is dependent in part upon the continued resistence of the gasket material in the various flange joints for its rigidity.

Frequently this section of pipe will act as a focal point for any vibration set up by the pump, magnifying the effect to dangerous proportions if the period of vibration and length of pipe happen to harmonize. Here, again, the straight-line hook-up desirable for minimum friction losses is least satisfactory for dampening out or killing vibratory impulses. In some instances it has been necessary to support the connecting link between the two pumps at two or more points to eliminate this magnifying of vibration effect, while in other cases the replacement of one or more of the original flanged joints with connections incorporating rubber sealing rings has served as sufficient insulator to attain the desired result.

Packing Practices

Packing of the high-speed and relatively small shafts of centrifugal pumps varies widely from practices standard in packing reciprocating plungers. Where metallic-faced packing is used, of prime importance is the placing of the rings within the gland so that the rotation of the shaft in service tends to press flat or smooth out the plies of metal. Although the contact pressure is slight, it is ample to roll up the thin ribbons of metal and cause serious difficulties if the ring be placed so that the shaft turns against the knife edges of the plies.

When cutting new packing for a centrifugal pump, if the rings be measured to fit snugly out against the casing and leave a slight clearance between the inner surface of the packing and the shaft, then when gland pressure is applied the packing expands evenly against the shaft, presenting a slightly bowed surface of contact which establishes even pressure entirely around the shaft. When applied in this manner, it is easy to guard against distortion of the metallic plies on the inner or wearing edge, and thus to insure a smooth surface for the shaft to revolve against.

Properly cut and inserted, this type of packing does not require great gland pressure to shut off flow along the shaft, nor is it then exposed to needless wear. One set of such packing, applied on a pump already showing upwards of 20,000 hours of service against a 750-pound pressure, ran with but one take-up adjustment for an entire six months' period between inspection-overhauls and was in such good condition when the pump casing was parted to allow inspection of the impellers that it was carefully removed and then re-

placed in the gland to determine, if possible, how much longer it would stand up. At the second overhaul period it was discarded, although no leakage had developed up to that time.

This record, though not unusual, was in marked contrast to the former repacking schedule at this station, where packing was provided for renewals at intervals of not more than 28 days of running.

Since many pumps are designed with divided or dual suctions, and thus secure practically a condition of hydraulic balance within the pump, the provision of integral balance discs is not universal. In those pumps where this feature is built in, however, the proper position of this disc must be watched. The usual type of pointer or indicator on the pump casing—if unmolested—will show when the rotor is carried laterally within the pump and thus call for an adjustment of the disc before damaging wear can take place.

The exposed position of this pointer sometimes leads to needless pump overhaul, as it is fatally easy for an oiler to catch his wiping rag in the pointer end and bend it from its proper position, or to strike it with a wrench when taking up on packing or wiper gland. If the proper position of the pointer be determined with respect to the pump casing when the unit is new, and then referred to this datum point before assuming that the balance disc has worn enough to demand readjustment, much pump trouble can be avoided.

There seem to be no definite, generally accepted rules for setting the clearance on these discs, one manufacturer specifying 1/64-inch space between disc and face of casing while another, with a larger disc than the former on pumps of corresponding capacity, specifies a maximum clearance of 0.010-inch. Since the effectiveness of such a balancing disc is dependent upon a film of the fluid being pumped existing between disc and wearing surface of the casing, it would seem that the proper clearance would depend upon the physical characteristics of the fluid being handled. One company transporting a number of different crudes with the same type of pumps, has standardized on the disc settings, shown in Table 1, it being considered a breach of duty if amounts outside the spread indicated be found on any pumps operated in company service.

TABLE 1

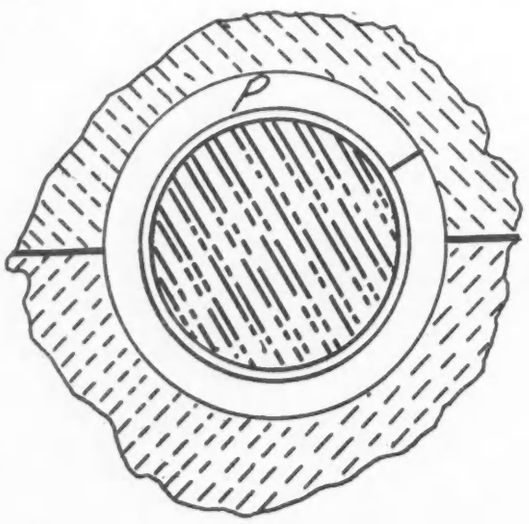
Balance Disc Clearance Settings

Crude, Origin	Initial Setting (Inch)	Resetting Clearance (Inch)
E-Tex (Summer)	0.015	0.007
E-Tex (Winter)	0.020	0.010
Van (All Year)	0.020	0.010
Talco (Summer)	0.025	0.015
Talco (Winter)	0.040	0.020

Both disc and fixed wearing face of the pump casing are chromium plated in the type of pump used by the company, and the initial period of operation before adjustment averages twice that attained after the first run. Balance disc wear is directly related to the amount of sand carried by the crude; an oil with a b.s.&w. content of four tenths of one percent requiring adjustment in half the time of one with but two tenths showing on shake-out. Presence of more than a trace of water also hastens balance disc wear, seemingly cutting the film of oil which normally covers both surfaces and absorbs most of the thrust between disc and fixed face.

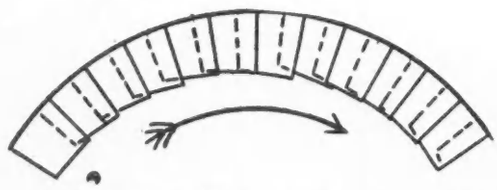
Knowing from his hourly shake-out records the sand and water content of the crude being pumped, it is easy for the engineer to check up on probable balance disc wear, and thus maintain a rough verification of the accuracy of the pointer furnished to indicate transverse travel of the shaft.

With but one moving part—components of bearings excepted—and a minimum of possible adjustments, care and maintenance of centrifugal pumps becomes principally a matter of keeping close watch against the intrusion of outside factors, such as vibration or improperly applied packing, which may set in train forces which, if not prevented, can quickly wreck such a high-speed machine as the modern multi-stage centrifugal pump.



Section through shaft and pump casing showing ring cut to fit casing closely and leave space for expansion toward shaft.

P = Packing.



Portion of packing ring showing proper relation between laps of metal foil and shaft rotation.

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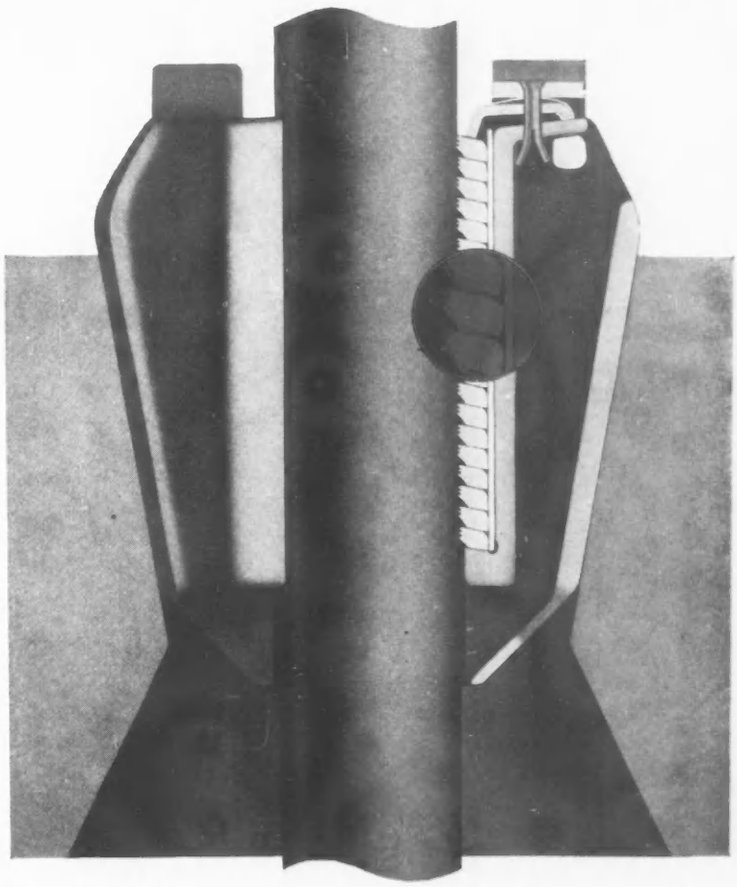

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Has Bright Future

By BRAD MILLS, Associate Editor

THE Texas-Louisiana Gulf Coast has become one of the world's great oil producing districts because of natural potentialities and the advancement of methods for finding the oil. It is obvious that both factors must be present before any producing district can become outstanding.

A comparison of the coastal belt with other producing districts reveals the real reasons for the rapid rise of the prolific strip lying between the Mississippi and Rio Grande rivers. Intensive and scientific exploratory programs in various semi-barren districts have resulted in virtual failure to develop oil production. Conversely, weak exploratory methods have failed to uncover large oil accumulations in districts that subsequently became great oil producing areas.

Has Every Requirement

The Gulf Coast has every requirement to make it a major oil producing district.

A Gulf Coast oil map reveals an almost unbroken chain of fields between the Rio Grande and Mississippi rivers. The South Texas district properly belongs to the Gulf Coast, although it yields a type of production not common to the true coastal belt. A comparison of a Gulf Coast oil map of 10 years ago with a map of today goes a long way toward explaining the dominant position now held by the district. Dozens of gaps have been filled in by large oil fields that were not suspected in 1927. It is logical to assume that important new fields in the future will appear in generous numbers. The rapid-fire order of new fields in the past has attracted operators from every producing district.

The Texas-Louisiana coastal strip provides the country's most logical hunting ground for new oil fields. The full length and width of the district definitely falls in the favorable classification, with several levels offering distinct possibilities. Deep formations and an improved geophysical technique have reopened a large part of the vast strip to exploration, even where earlier prospecting showed only faint indications of unconformities. The slightest irregularity of 10 years ago now is eagerly sought by companies that wish to place a new interpretation on the unconformity. Several good oil fields have been discovered by companies that took previously unintelligible data and turned them into a well-defined structural map before actual drilling began.

Search Broadened

The search for oil along the Gulf Coast has been broadened to meet conditions that were not considered or known during the early development period. The discoveries of each year have offered new possibilities for the future, and particularly have developments of the past two years been encouraging. The chief factors accounting for the Gulf Coast's present dominant position are:

1. Natural potentialities.
2. Geophysics.
3. Progress in deep drilling.
4. Refineries.
5. Trend toward light oil.
6. Transportation facilities.
7. Future possibilities.

"Natural potentialities" appears a very general term, but it simply means that an area must be naturally rich to become an important oil producing district. The "future possibilities" factor is significant because the hope for new production is the principal driving force in the wildcatting campaign now under way.

How many fields will the Gulf Coast have 10 years from now? Five years from now? The assurance that it will have a much larger number than it now has prompts operators of every size to increase efforts to find new oil fields. Every indication points to a steady list of discoveries during the next five years. The discovery rate may be slightly lower or higher than the average for the past five years, but it will be physically impossible to prevent the discovery of a number of good fields in the immediate future. Activity now under way practically guarantees a continuation of oil discoveries. An analysis of current wildcatting shows a list of promising prospects that should yield a good percentage of oil fields. Most of the well defined structures have produced oil in the past.

Past Ten Years Successful

By imposing a transparent Gulf Coast oil map of 10 years ago on the latest map, the number of fields "showing through" on the new map actually exceeds the total on the older map. Many of the conspicuous gaps appearing on the 1927 map have been filled in on the new map with oil fields. Discoveries during the past five years have come at a rapid rate, and oil reserves have

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been sharply increased by these new fields. Several of these discoveries have changed the picture in areas that previously had been neglected from an exploratory standpoint.

Gaps Still Conspicuous

To the critical observer, the gaps or vacancies on the 1937 map are as conspicuous and important as those existing in 1927. Lafitte, Friendswood, Houma, Tepetate, Hastings and other recent discoveries answer any argument that may be advanced against future possibilities. The typically flat areas near Houston, Beaumont, and Bay City, Texas, and Lafayette, Louisiana, have been heavily prospected, but they continue to yield new oil fields. South Houston and Friendswood reflect possibilities of the flat district near Houston and Galveston.

Oil fields along the Gulf Coast have appeared in greatest numbers in the most accessible areas. The tendency to prospect near Houston and other well drained areas has placed the oil fields in clusters.

Look to Uniform Distribution

There are good reasons to believe that the eventual distribution of oil fields will be more general and uniform than those now producing. More intensive development in the remote and inaccessible districts along the coast line should yield important oil fields of several types. The recent entry of major companies into new districts added several fields at depths formerly regarded as prohibitive.

Discovery of one field after another along the Gulf Coast has offered the most convincing evidence that new fields in the future will come in generous numbers. A year ago, two years ago, and even 10 years ago, the more conservative operators predicted a sharp decline in future discoveries along the coastal strip. Conroe, Anahuac, Dickinson, Hastings and a dozen additional fields have appeared to give a new perspective to the district.

Deeper Production

The extremely deep production along the Louisiana coast line has placed a new value on a large area already potentially important. Drilling practices have kept pace with the increase in oil reserves at new depths, and the likelihood of increased activity probably will be reflected in the future by actual discoveries at great depths.

The Gulf Coast once was regarded as a producer of heavy oil exclusively. All of the shallow salt domes produced heavy and intermediate grades of crude oil, and the first large demand for oil containing a high gasoline content failed to affect Gulf Coast fields.

Recent development of the deep seated salt dome has changed the picture and placed the district in the light oil producing column. Increased depth seldom fails to result in higher gravity oils along the entire length of the coastal strip.

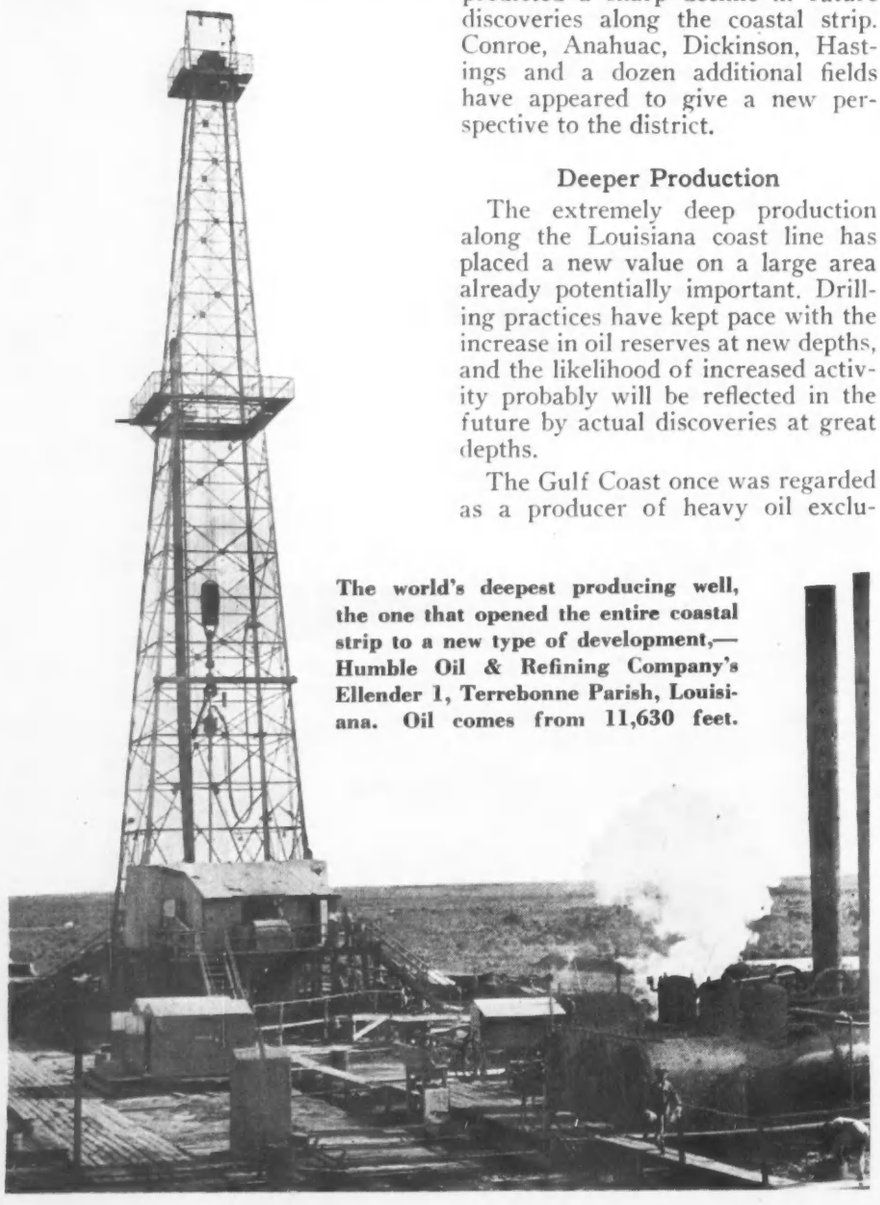
Several fields produce both gas and oil, with some of the deepest producing areas showing a large production of distillates. These combination gas-oil fields are an important contribution to Gulf Coast reserves and point to a new type of oil and gas production. Such fields as Tomball, Old Ocean and Pledger yield high gravity crude oils, distillates and natural gas. At least three fields or prospects in Louisiana have yielded very high gravity oils, along with large quantities of natural gas.

Plenty of Stable Crude

Several geologists hold to the theory that most of the very deep Gulf Coast production will be distillates and gas, but discoveries at Houma, Lafitte and Tepetate, Louisiana, and several deep Texas fields indicate that stable crudes will be produced at all depths within reach of the drill. Due to the pressures involved, very deep production necessarily will be confined to high gravity crudes, distillates and gas, but fairly stable crude oil may be expected in formations that yield stable crudes at shallower depths in other areas.

The Gulf Coast picture has changed to include the 12,000-foot prospect. The acceptance of possibilities below 11,000 feet has opened a large area to a new type of development. Most of the Louisiana coastal strip is affected by the deep type of production recently developed near Houma, where the world's deepest producing well was completed this year at 11,630 feet. This discovery alone greatly increased the value of Delta and South Louisiana leases of every type. Promise of a heavy flow of high gravity oil from 11,000 to 12,000 feet has added interest to operations in an area that has no "bottom" to its imposing list of favorable formations. Production of oil at 10,000 feet will cease to be a novelty in South Louisiana in a few years.

An analysis of the undrilled prospects along the Louisiana coast line reveals a condition that places this



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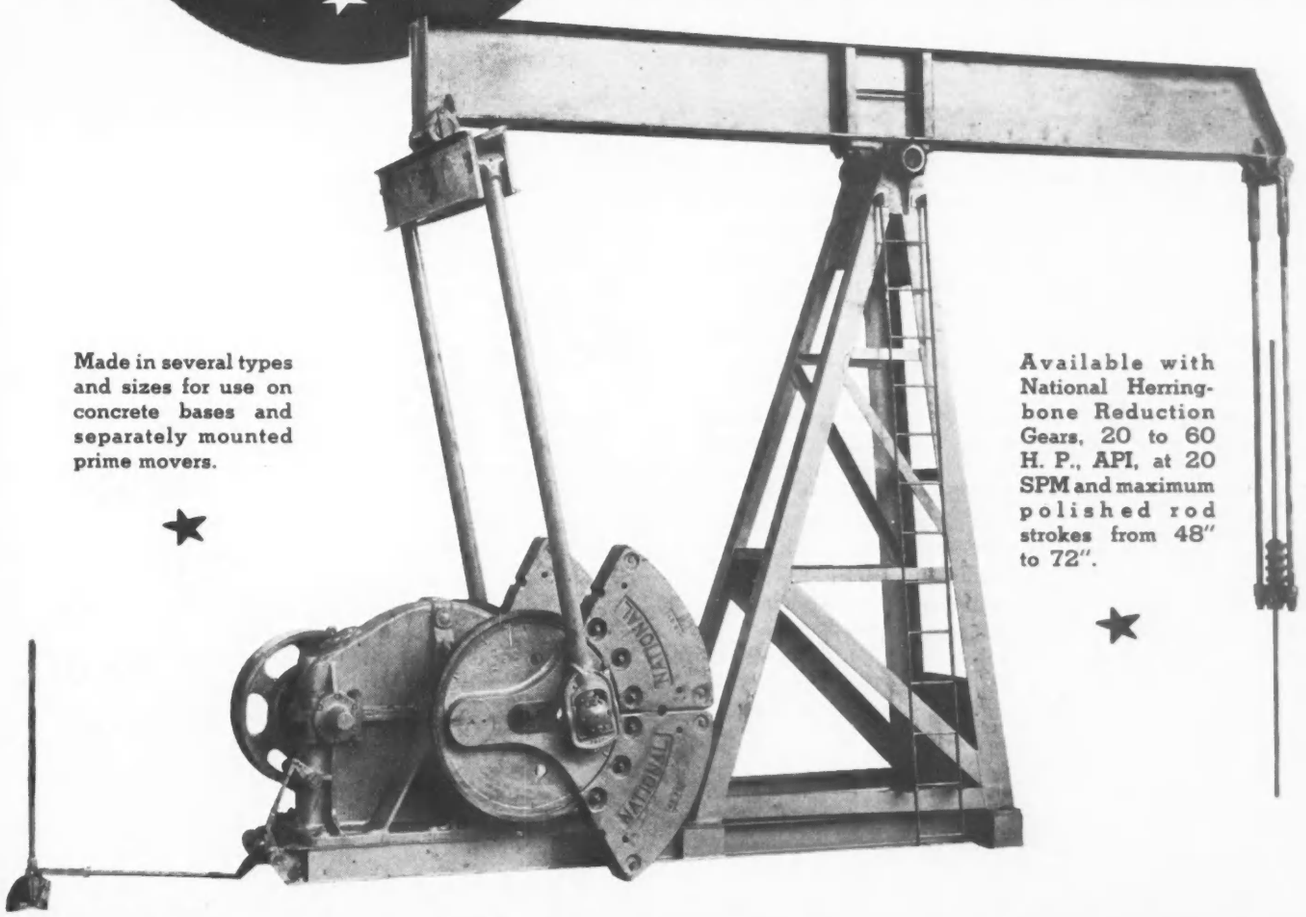

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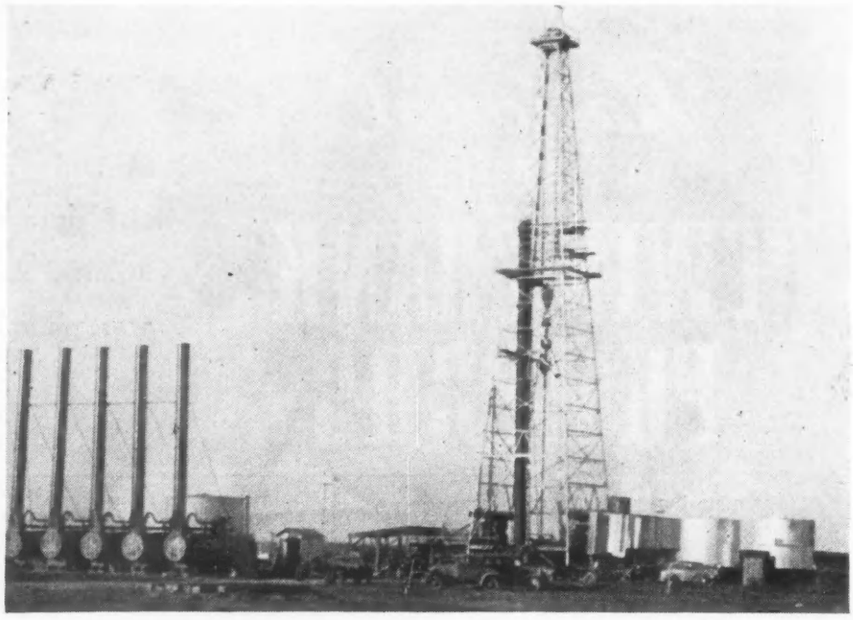

Typical layout in Gulf Coast oil field. Outfits of this type are capable of drilling to 12,000 feet.

district in an enviable position among the producing areas of the world. There are from 300 to 500 prospects of all classes between the mouth of the Mississippi river and the Texas state line near Orange, a strip averaging about 60 miles in width. Not all prospects are considered first rate risks, but a fair percentage will produce oil in commercial quantities. One major company has mapped 31 prospects in a comparatively small area—so many that it has been forced to farm out a number to smaller operators.

Recent working and reworking of of an area equalling less than one third of Louisiana coastal strip resulted in the discovery of dozens of prospects of all types. It has been impossible to classify these prospects, since what appears to be a poor risk often results in a major discovery. Each prospect was classed as such when a definite irregularity or structural tendency was found. Any distinct change in the position of formations along the Gulf Coast is significant, and it is only through these changes that geophysics is able to function.

Mississippi Delta Important

In the upper Mississippi delta area, a large number of prospects has been located by geophysics. In the vicinity of Houma, Thibodeaux and Grand Lake an extensive geophysical program has been completed. Special attention has been given to this area because of the belief that the general district may develop into a major "high" or uplift.

A study of the coastal map shows that the Mississippi river changes from a southwest to a southeast course at a point just south of its entry into Louisiana proper. This decided change in course indicates that originally the surface was high enough in the Atchafalaya and Grand Lake areas to force the river channel to the southeast. If the Mississippi river had continued to flow to the Gulf of Mexico along the course it takes between Vicksburg and the mouth of the Red River, its mouth would be at a point near New Iberia. This area was neglected during the early coastal development period because of poor drainage and limited transportation facilities, but the assurance of flood control has increased reconnaissance work. Concentration on deep oil possibilities has revealed a large number of new prospects.

The record deep production recently developed in the Mississippi delta area comes from the basal Miocene and the upper Oligocene. The accessibility of these formations has reopened a large area to development along the delta "fill" that originally was regarded as of questionable value because of the depth involved.

Production Trend

Daily production of oil along the Louisiana Gulf Coast has increased in less than five years from 35,000 barrels daily to more than 170,000 barrels daily. The increase has been steady since 1932. The reserve picture has changed every year, but the change always has been upward. Production at greater depths and from new formations in several districts has attracted major operators from every part of the country. Important discoveries are expected within the next two years.

15,000-Foot Oil Possible

Oil production at 15,000 feet is a distinct possibility along the Louisiana coast. The Frio or other oil bearing formations will be found at 14,000 to 16,000 feet along the extreme coastal strip and in the delta area, and the record production of tomorrow may come from these deep strata. Development of oil at 14,000 feet is a speculation today, but it will be more than a remote possibility five years from now. It is reasonable to assume that a favorable structure along the delta strip will prove productive at levels far below those now productive.

Reconnaissance work is being pressed in areas along the Louisiana coast that have been regarded as almost inaccessible with heavy equipment. The discovery of a large number of prospects and a smaller number of oil fields in the most inaccessible sections of the district has been the chief driving force in the expansion of geophysical and exploration work to every part of the coastal strip.

Area Open to Geophysics Growing

Both the remote inland waters and the treacherous swampy strip skirting the coast line still offer a fertile field for geophysical exploration. Eight oil fields were found in a small area in and near the extreme south part of Terrebonne Parish. The discovery of the first field was followed by an intensive

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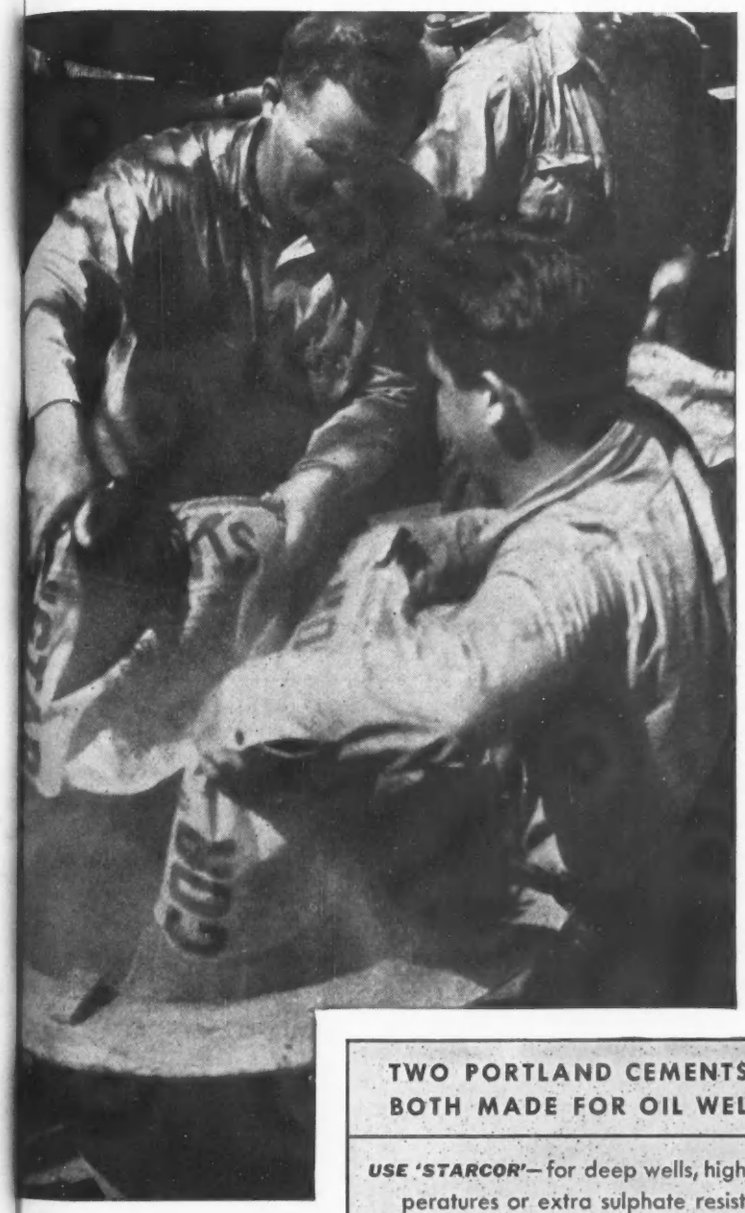

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geophysical campaign that resulted in seven additional fields in a small area. It is not likely that every small section of the Louisiana coast line will yield from eight to 10 oil fields, but the original occurrence of such a cluster of fields indicates that development in the remote sections of the swampy and submerged strip will be extensive and profitable.

The Texas Gulf Coast section remains in line for continued development, and the most recent discoveries were of a type that stimulated interest in prospects that formerly were regarded as second rate risks. It has been especially difficult in the past to impress operating companies with the importance of every type of prospect. On more than a dozen occasions major companies have frowned on possibilities of indicated structures that did not meet all requirements, only to be forced later to watch the prospects develop into large oil fields. Many of the prospects designated as second and third rate risks would plainly be first rate risks, if it were possible to place the proper interpretation on preliminary work.

Watch All Formation Changes

With the very expensive oversights and blunders of the past in view, major operators are beginning to concede the possibility of success on any prospect. Conroe, Sugarland, Tepetate, Friendswood and other fields were regarded as second and third rate risks before they were drilled. By some peculiar twist or interpretation, geologists have condemned a number of good prospects. Experience along the entire coastal belt has proved that hasty judgment is a weak means of passing off or sidetracking formation irregularities that indicated a structure.

Any definite formation change along the Gulf Coast is important, and especially significant are the structural tendencies in the lower formations. A large invading company recently took four cast-off prospects and converted them into three oil fields. The "native" companies had studied geophysical maps of the four areas, but could not place a favorable interpretation on any one of the prospects. The best of the four prospects was farmed out because it was impossible to show a satisfactory closure on only one side. The blunder cost the releasing oil company millions of dollars, since the field developed into one of the most important along the Texas coast.

Accidental Discovery

One of the most recent Gulf Coast discoveries was made as the result of drilling that was forced by the expiration of the leases. The operating company did not wish to drill the prospect, and regarded it as a very poor risk. The discovery opened a producing area with an unusual sand thickness and practically forced the area into the producing classification. The geophysical data was considered weak, but a subsequent study proved that the original interpretation was wrong.

Large oil companies, and particularly the invading operators, are giving more careful consideration to old geophysical data that were discarded after the original reconnaissance work was completed. A more liberal interpretation of geophysical data has added a large number of prospects to the undrilled list during the past year, *but it still does not follow that the slightest irregularity indicates a promising prospect or structure.* Geologists of the new school are more open-minded than the older geologists who insisted on proper closure and other favorable indications.

Such deep-seated salt domes as Hastings, Anahuac, Conroe, Old Ocean and Bay City have done much to awaken the doubtful geologist to the importance of prospects of every type. Where a structure is definitely indicated, it does not pay to be too critical along the Texas Gulf Coast. Skepticism has been the chief factor in throwing good fields into the laps of companies that took unintelligible data and converted it into a structural map of promise. The possibility or importance of faulting is being recognized much more than in the past, and geologists now generally agree that it is not necessary to map a perfectly indicated anticline before considering it as a promising prospect.

Recent Strikes Forerunners

The Texas Gulf Coast offers vast possibilities for future development, and continuation of important oil discoveries should be expected. The discovery of a cluster of fields near Houston and Galveston should be interpreted as a forerunner of deep development over most of the district. If it is possible to find several large fields only a few miles apart in a small area near Houston, it will be difficult NOT to find a large number of fields along the coastal strip proper. Many gaps between producing fields will be filled in with new fields before the present development program has been completed.

Intensive development for 8000- to 10,000-foot production has not been carried out in the remote sections of the district, but fields of this type probably will be found along the full length of the coastal strip. The promising area is so large that several years will be required to complete even an intensive reconnaissance campaign that will be representative for all levels to 10,000 feet. The accessible and fairly well drained district near Houston and Galveston has been a favorite hunting ground for several major operators. This search is being spread to the less accessible areas that may prove equally as productive.

Geophysical work of some type has been done in almost every community along the Texas Gulf Coast, but the reworking of the greater part of the district will place greater stress on deep oil possibilities. During much of the early geophysical work, formations below 7000 feet were barely considered. Formations between 7000 and 10,000 feet now offer the greatest promise, and because of the inadequacy of early geophysical work, additional preliminary work will be required. If the amount of geophysical work done in the Houston - Galveston area were completed in a few of the more inaccessible Gulf Coast areas, it is believed that a number of good prospects would be found. The size of the Gulf Coast strip assures a continuation of extensive geophysical work.

Geophysical Improvements

The improvements in geophysical technique include a more refined mechanical set-up and a broader and more accurate interpretation of data. It is not only possible to shoot for deeper reflections than were desired a few years ago, but it is easier to identify formation irregularities that were a distinct puzzle during the shallower exploration period. The reworking of several sections that revealed unintelligible data five and six years ago is under way, this type of work having been prompted by the success of similar follow-up programs. The rework-

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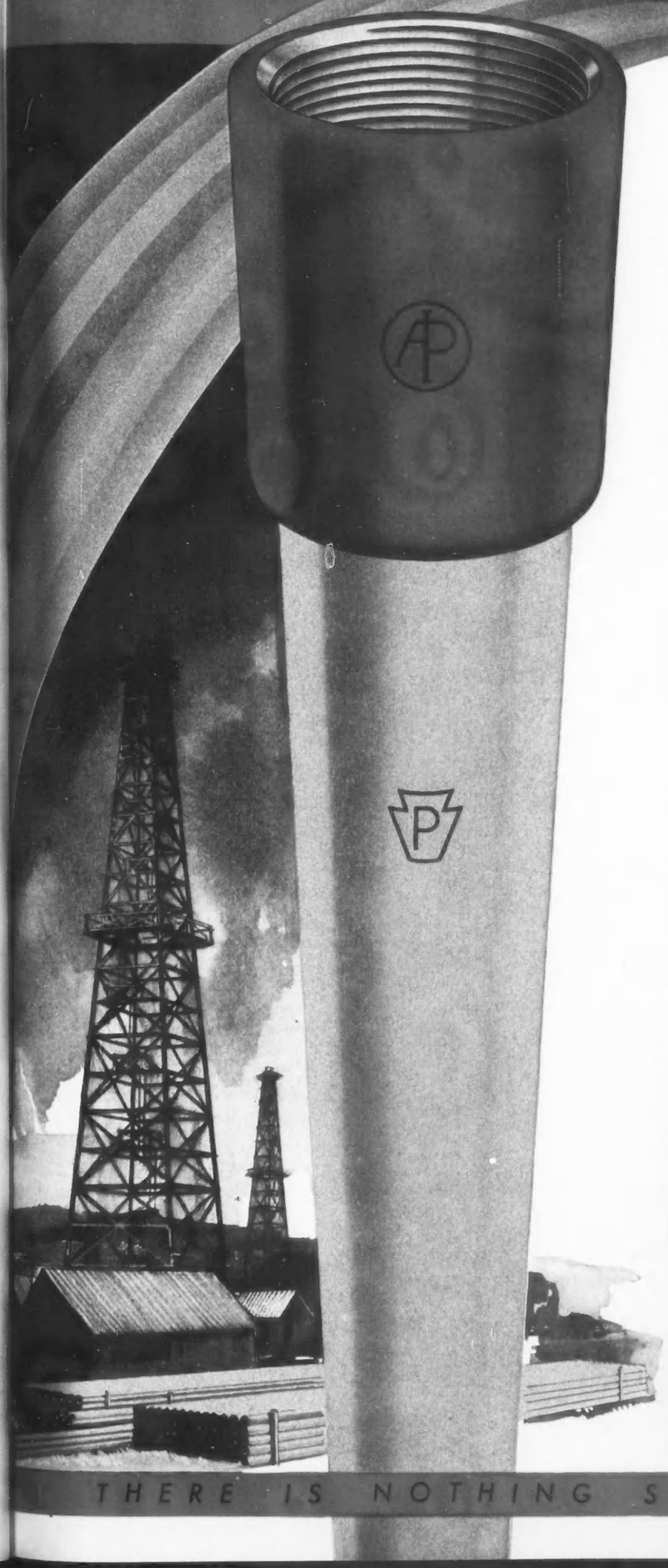

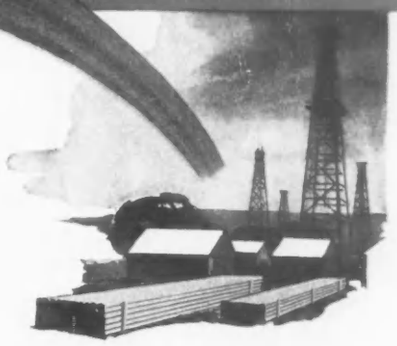

THROUGHOUT the oil fields you will see silver-colored Pittsburgh Seamless pipe and tubing in storage yards, on trucks and trains, on racks at rigs, and being run in the wells. Such popularity has not just happened. It is the result of more than thirty years of determined effort to provide oil producers with a better product, to meet every advance in drilling technique with corresponding improvements in pipe and tubing.

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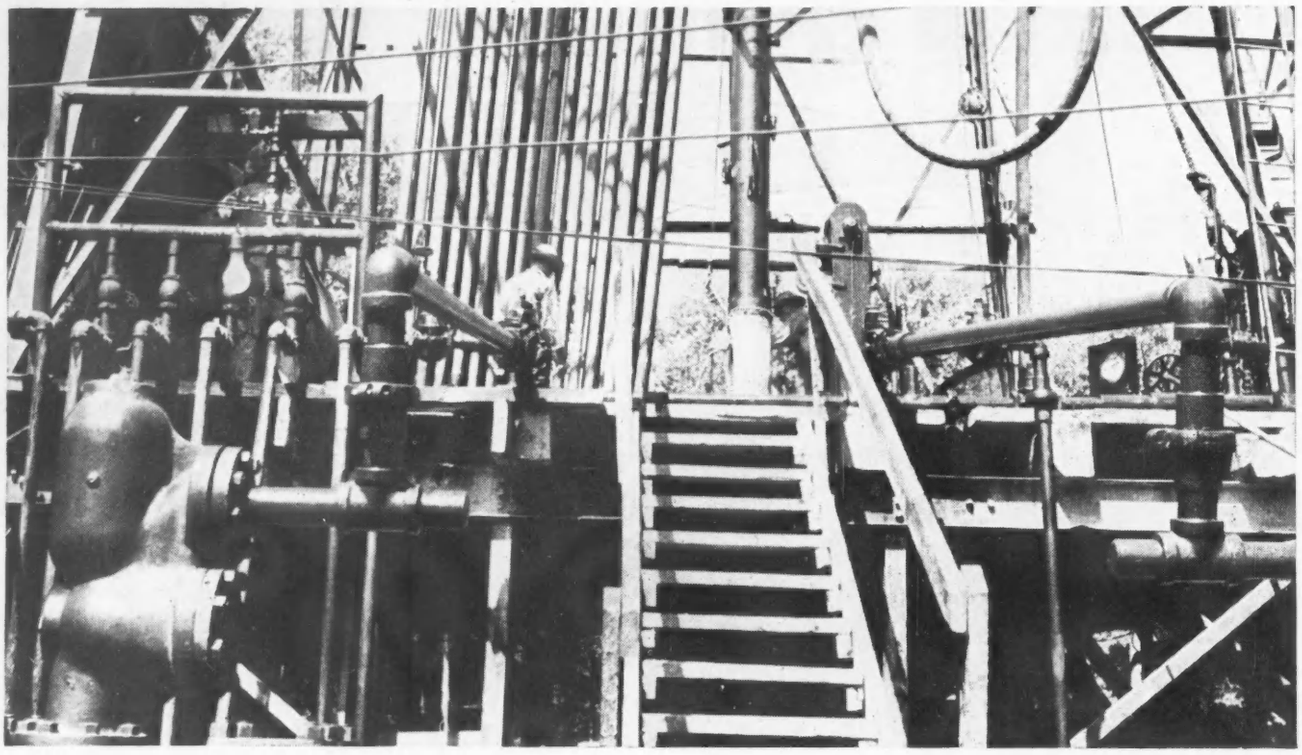

Superior Oil Producing Company's Butler 1, Harris County, Texas, deepest test yet drilled along the Conroe trend, illustrating size of equipment used in going after the new horizons.

ing of complex formation irregularities has resulted in a half dozen important discoveries.

An intense combing of gaps between producing fields is employing a large number of geophysical crews. Where it was believed a few years ago that the minimum distance between fields would eventually be four to six miles, it is now believed that fields only two and three miles apart will be developed. This nearness of fields probably will be caused by the presence of two or more producing areas on a single major uplift. This condition has been indicated by recent discoveries near Houston. Productive trends have been developed, but success also has accompanied reconnaissance work between fields that were not along the same trend.

Frio Worth Going After

Most of the recent deep production along the Texas Gulf Coast has been developed in the Frio formation of the Oligocene. The Frio sand is found at various depths between 6000 and 11,000 feet, and is accessible along the entire coastal strip. Along the Louisiana coastal strip, the formation probably lies at too great a depth for development in the delta area and along a narrow strip near the coast line. Production below 10,000 feet has been developed in the Frio sands at Old Ocean, Texas, where the greatest alternating productive thickness of the formation ever drilled has been logged. More than 900 feet of alternating bodies of oil sand and shale has been cored in this field, and several producing levels have been tested. The Frio sands overlie most of the deep-seated salt domes along the Texas-Louisiana coast, and is the objective formation in most of the deep tests now under way.

Progress in Drilling Methods

Progress in deep drilling methods has removed the chief barrier to development in several of the deepest producing districts. The 10,000-foot well is no longer a novelty—it is a common occurrence. It has become possible to test the 10,000- and 11,000-foot prospects as they are found, a feat not practical a few years ago. Deep drilling progress has kept pace with geophysical refinements to form an effective combination in the search for record production.

A good demand for Gulf Coast oil from local refineries, plus a strong outside demand that is satisfied by water shipments, has had a stimulating effect on operations. The trend toward an increased production percentage of refinable crude oil has paralleled a better demand for gasoline-bearing crudes. A larger production of Gulf Coast crude has been well absorbed by local and outside markets. The easy movement of petroleum products by water from the coastal strip has reduced transportation costs where pipe lines were not available.

With 267 active drilling wells, the Texas-Louisiana Gulf Coast is definitely in line for a number of important discoveries at various depths.

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FIG. 1510—Cut-out section of UNSHAKO Nut, showing Locking Ring in position.

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Bradford Water Flooding Principles

MUCH VALUE MAY BE PROCURED BY REVIEWING BASIC OPERATIONS

By JOHN C. ALBRIGHT

PART 2
Drilling and Producing Work

WHEN inspection of a property to be placed under a flood has been completed, as explained in Part 1, the usual procedure is to begin drilling input water wells. These wells are spaced in regular patterns. There are two spacing styles in use. One is in the shape of a square, and is known as the "five spot" pattern. It has four input wells at the corners of the square and an oil producing well in the center. The other pattern is called the "hex", and as its name implies provides for six input wells to each oil producer, the latter being in the center of the hexagon. The distances between wells vary somewhat, running from 220 feet to over 300 feet. Petroleum Reclamation Corporation spaces its input wells, when drilled in the hex pattern, about 240 feet apart, depending upon the ground topography, which sometimes causes a variation in the location from 235 feet to 245 feet. Creeks and high bluffs in extreme cases may necessitate that some of the wells be as close as 210 feet, and others as far apart as 305 feet. However, inequalities in distance from the center of the pattern have not appeared to be sufficient to cause overlapping of the water with a consequent trapping of the oil between the walls of water.

Delayed Flooding Practiced

Delayed flooding is being practiced by the majority of operators at Bradford. Under this system, input wells are drilled and water injection into the producing formation is started before drilling machines are moved to the locations selected for oil wells. Several reasons have been advanced in support of this practice. Water introduced several months into the sand before an attempt is made to recover any oil is said to permit the hydraulic system to reach its peak at the time obtainment of production is commenced. Moreover, a lesser number of drilling machines is required when a flood is operated in this manner, consequently the expenditure for reconditioning and redrilling a property may be extended over a greater period of time.

On the other hand, some operators drill a line of wells as they advance across a lease, completing all holes as each location is encountered regardless of whether the site is for input or producing wells. When this method is used, water is pumped into the input holes as they are completed, and producing wells are equipped and production procured as rapidly as possible. Olean Petroleum Company follows this practice to some extent, advancing the theory that it is better to obtain the advance in oil production as it is forced to the central location rather than take a chance with certain traps which may occur between the walls of advancing water.

Casing Programs

The casing string in input wells is invariably set with the shoe below the strata of surface water, which is found at various levels at Bradford. As explained in Part 1, formations at Bradford permit the using of a minimum amount of casing. An average of about 300 feet of 6¼-inch casing are required, but the remainder of the hole, being almost solid rock, stands up without pipe protection. After the hole has been completed, two-inch tubing equipped with a flood packer is set at a predetermined point above the sand. From an analysis and inspection of the cores removed from the well, this tubing setting point may be fixed easily. In determining the setting point, the sand to be flooded should be removed from stray thief sands, likewise sands having low oil content or any other objectionable feature should be separated. Some operators perforated the lower portion of the tubing, that below the packer, so the pressure placed upon the flood water may exert an equal force throughout the vertical section. Sometimes the sand is shot with a light charge of glycerine, but this is always light enough to crevice the formation and not break it down sufficiently to cause a cleaning out job.

After running the tubing in input wells, the packer is tripped at the desired point and usually 15 sacks of cement slurry are pumped into the annular space between the tubing and the walls of the hole. Soft, well-mixed mud is then run into the hole above the cement to prevent possible caving and to keep the hole in condition for future tubing removal. Some companies equip the string of tubing with a left-hand collar, placed a joint or two above the top

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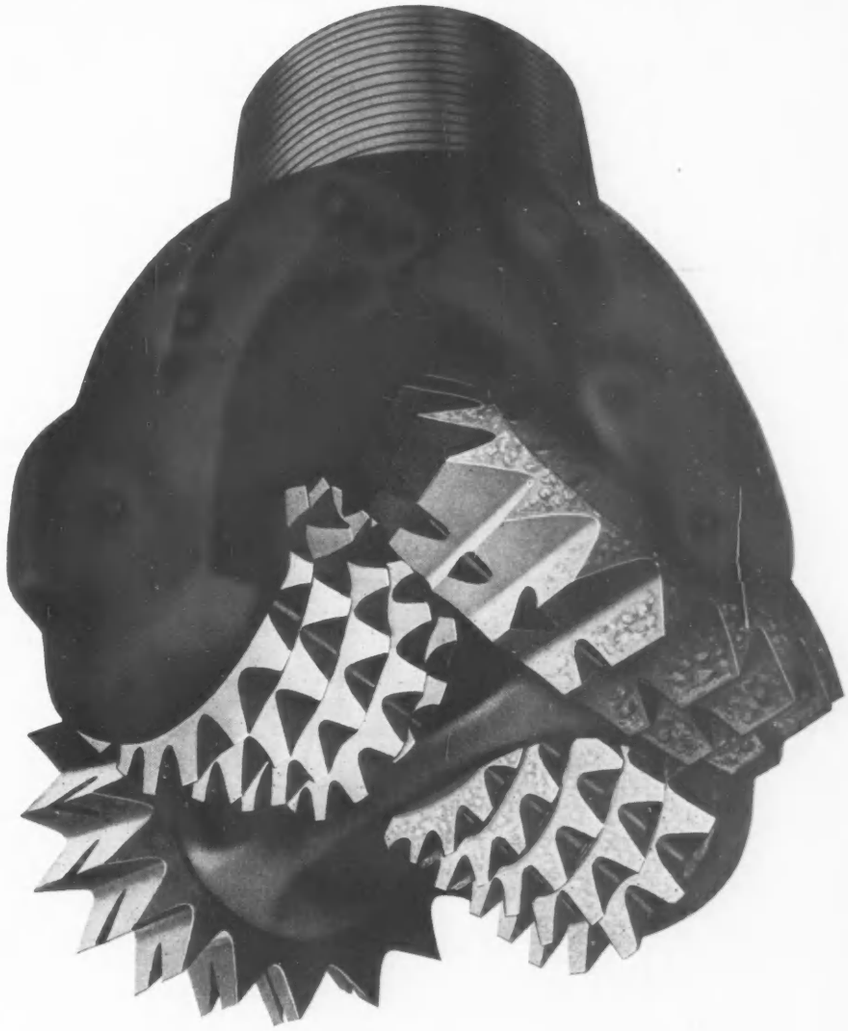

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of the cement. This facilitates salvaging operations when the project has been completed.

Upon completing input wells, if the delayed system is used, the drilling of producing wells in the center of the pattern is commenced. These wells are usually finished with the same amount of casing as that used in injection wells. The shoe is set below the fresh water level and the remainder of the hole left open and unprotected.

Sand Area Selection Important

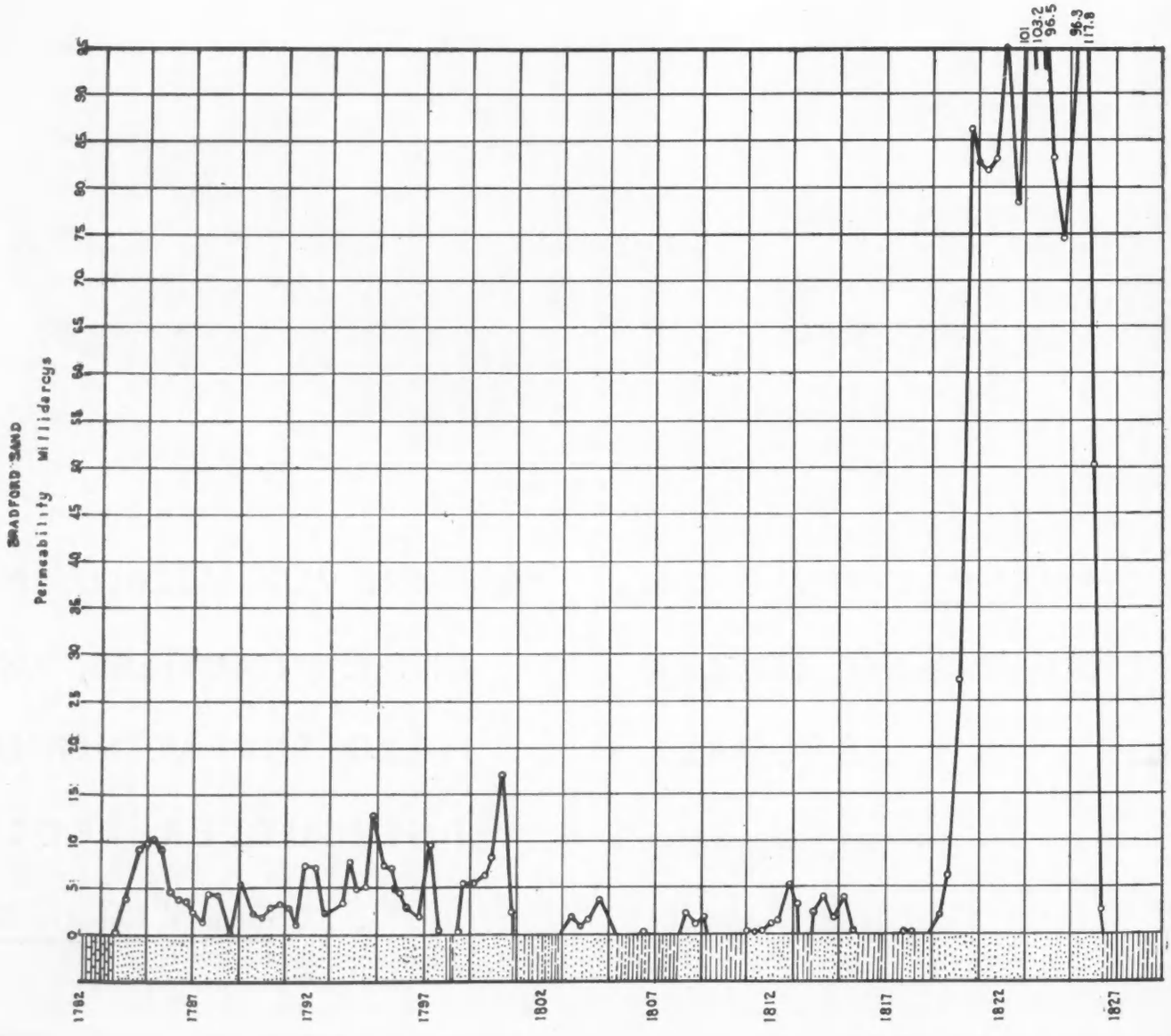
While it is generally considered advisable to plug off highly permeable sections of sand, it has been proved that this is not always necessary. A well operated by Petroleum Reclamation Corporation found a section in the extreme bottom of the hole with a permeability running as high as 117.8 millidarcys. (Figure 1) The well was bottomed at 1827 feet, and cored from 1782 feet to the rock below the sand. The highly permeable sand section was 7.10 feet in thickness, and was separated from the main sand body by a reasonably thick shale break. The main body of the Bradford sand in this well had a thickness of 27.10 feet, and showed a permeability of 3.900 millidarcys.

Figure 2 shows the remainder of the core analysis of this well. The average permeability of the entire vertical section of sand, 34.2 feet thick, was 18.72 millidarcys. The porosity was 16.53 percent, the saturation 44.87 percent, with the oil in place amounting to 19,686 barrels per acre. The highly permeable section was found to contain almost 700 barrels of residual oil per acre foot, where the entire sand body had but 575.6 barrels per acre foot.

The property upon which this well is located was placed under flood January 1, 1935. Production at the time amounted to only 4/10 barrel per day. The

FIGURE 1
Core Analysis showing permeability of a well at Bradford.

Depth, Feet	Feet of Sand	Avg. Permeability
1783.6 to 1819.3	27.10	3.900 millidarcys
1819.3 to 1826.4	7.10	76.302 millidarcys
1783.6 to 1826.4	34.2	18.72 millidarcys



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See CLARK Section, 1937 Composite Catalog.

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output increased slowly until May 1, when the hydraulic system had been reached in the highly permeable section at the bottom of the hole. At this time production climbed rapidly to a peak that was reached July 15. Oil produced from the well declined as rapidly as it had increased, falling to about 20 barrels daily on August 5. The curve then flattened out on a 19-barrel daily production during August, September and during the major portion of October, when the hydraulic system had been reached in other parts of the main sand body. The second production peak was attained the middle of November when it recovered 29 barrels daily and remained at this point for about 30 days. The production then flattened out with a general downward but less violent trend, showing that the flush part of the oil had evidently been driven to the well by the water flood. The inequalities in the production curve are explained by engineers to have been caused by inclement weather, which hampered development throughout the district to such an extent that constant pressure of flood water was prevented by station troubles, minor shut downs and the like.

Expect Long Life

Water floods of this nature are expected to continue for many years, or until the volume of oil recovered prevents them from being operated at an economical rate. Invariably, after the peak production has been obtained the water to oil ratio increases gradually. Pumping large quantities of water to procure relatively small volumes of oil obviously will determine the life of a water flood.

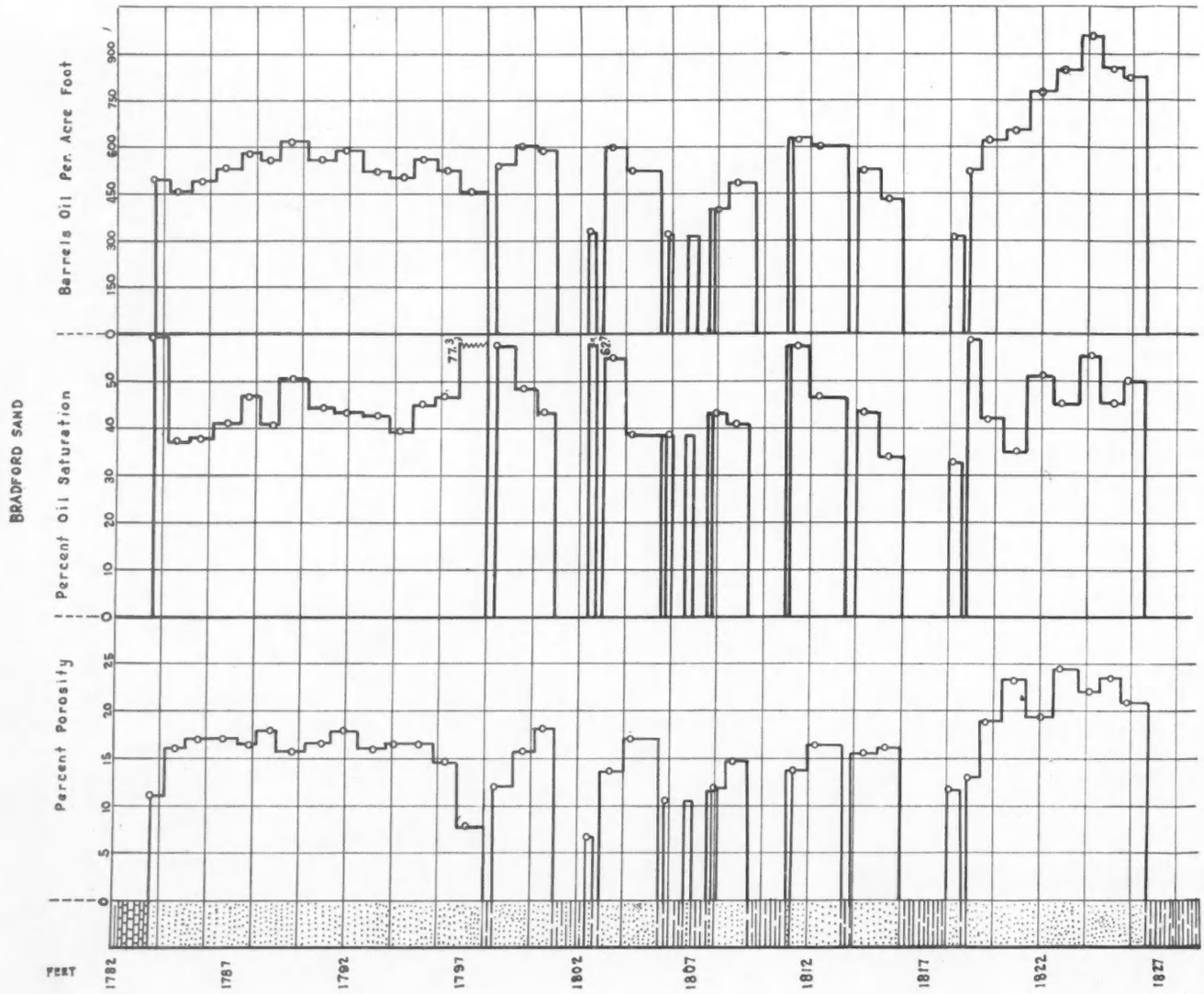
Producing a flood is generally accomplished with regulation tubing and rods, and at Bradford most wells are pulled from central powers.

Thus far nothing has been said in this series about procuring, producing, treating and injecting water into the sand. This is one of the most important phases of water flooding and will be discussed in the third and concluding installment, which will appear in an early issue.

FIGURE 2

Calculations made from core analysis of well at Bradford.

Depth, Feet	Feet Sand	Percent Porosity	Percent Saturation	Bbls. per Acre Foot	Bbls. per Acre	Avg. Permeability Millidarcys
1783.6 — 1826.4	34.2	16.53	44.87	575.6	19,686	18.72



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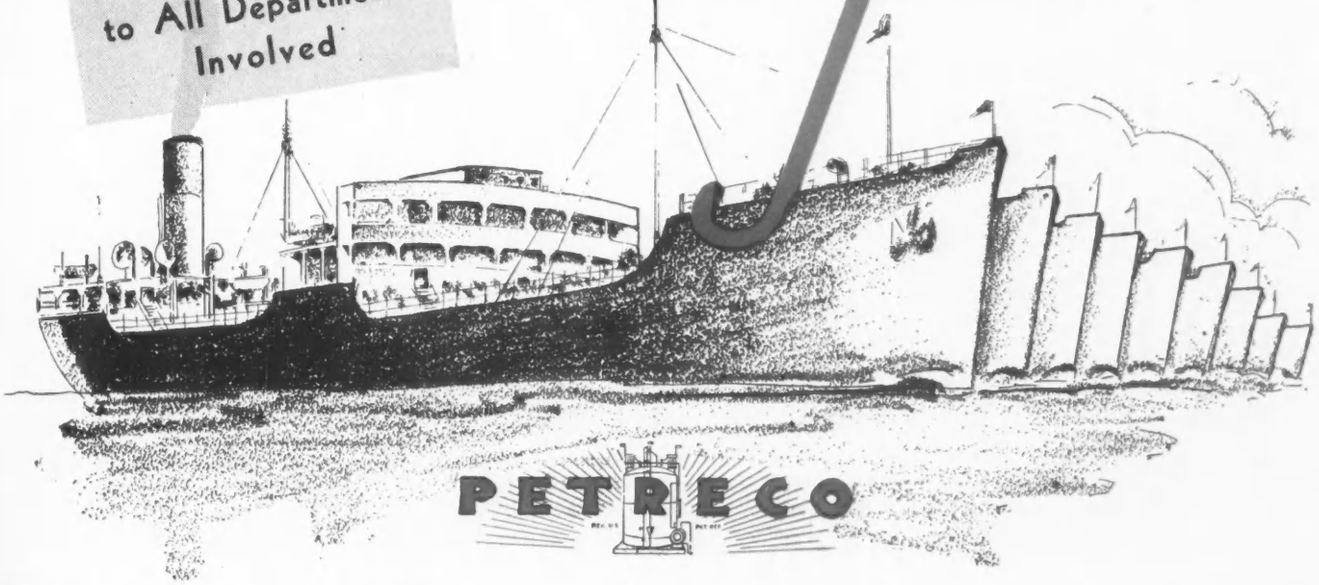


GRAVITY FLOW FROM SALT CREEK FIELD PROVIDED BY

Long Pipe Line Bridge

By HAROLD W. KEYSER

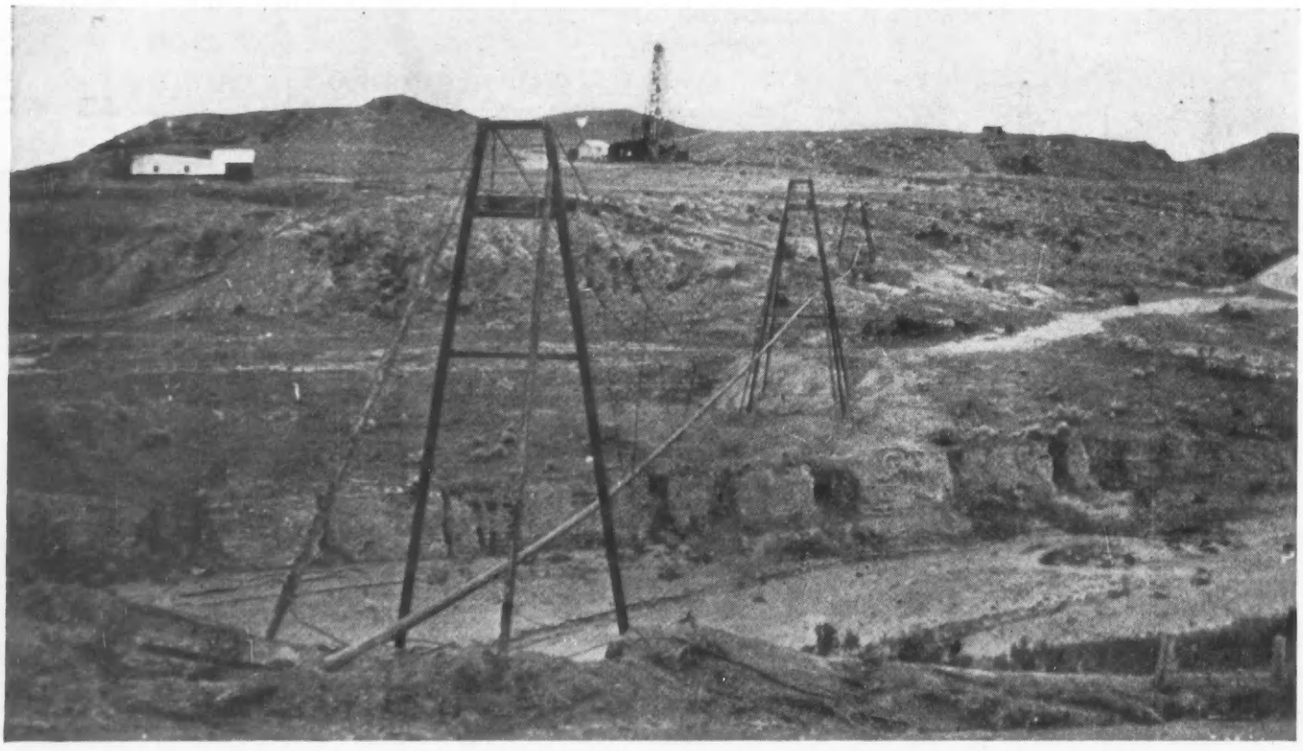
COMPLETION of the longest suspension pipe line span in the Rocky Mountains marks another advancement in modern oil transportation. The span, embodying several new features classed as radical departures from accepted construction methods, was erected by Sinclair-Wyoming Pipe Line Company across Salt Creek in the Salt Creek field of central Wyoming.

Traveling 480 feet between the end towers of the bridge, the six-inch line, at its highest point, is 45 feet above the bed of the creek, over which it was carried so as to provide a straight gravity flow of crude produced on Continental Oil Company's Black lease to the main Sinclair-Wyoming Pipe Line Company's gathering station. The new gravity line, which contains some 2285 feet, connects the lease with the pump battery serving the main gathering system. By adding the steady gravity flow of crude to the pump capacity, efficiency of the pump battery has been nearly doubled.

Engineers were faced with the problem of bridging an unusually broad wash, and still keeping the line sufficiently straight to prevent any excess friction from slowing the flow of oil from the well to the battery.

Construction

The line was constructed by a welding crew of 14 men equipped with two trucks. By using one of the trucks equipped with a winch as drag line, the position laid out for the suspension towers of the span were excavated by members of the crew, headed by H. E. Lyons, Sinclair-Wyoming pipe line foreman.



A perspective view of the finished project gives an idea of the size of the span. Note that the supporting cables are fastened to the bracing legs of the tower, and not snubbed in the ground where rust and corrosive action of the alkaline soils would cause rapid deterioration.

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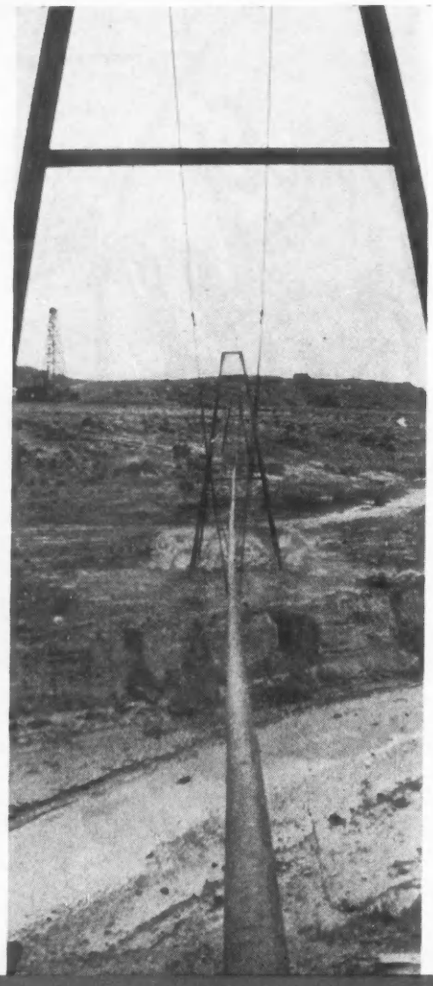
The towers, three in number, were fabricated on the spot by members of the welding crew, using salvaged six-inch and four-inch pipe. Main uprights and cross members of the towers were made of the six-inch pipe, with braces and cross-footing of four-inch pipe. Sections of the towers were dove-tailed together and electrically welded making each a rigid unit fully capable of supporting the strain of carrying the line.

Interesting Braces

The center tower, 50 feet high, is set 10 feet in the ground in the middle of the creek bottom. End towers are each 38 feet high and bedded firmly some eight feet into the banks of the draw. The transporting line runs over a supporting cross member in the central tower and is supported midway in its intervening spans by 1-inch cables running over the towers and anchored to the end braces of the two outside towers. A departure from the customary method of bracing such structures was found in this combination, in that the supporting cables were not anchored to "dead men" out from the end towers but were clamped by means of eyes, made of salvaged polish rods welded to the bracing legs of the towers.



Looking down the finished line in the direction of flow, two towers of suspension span may be seen through the legs of the first one.

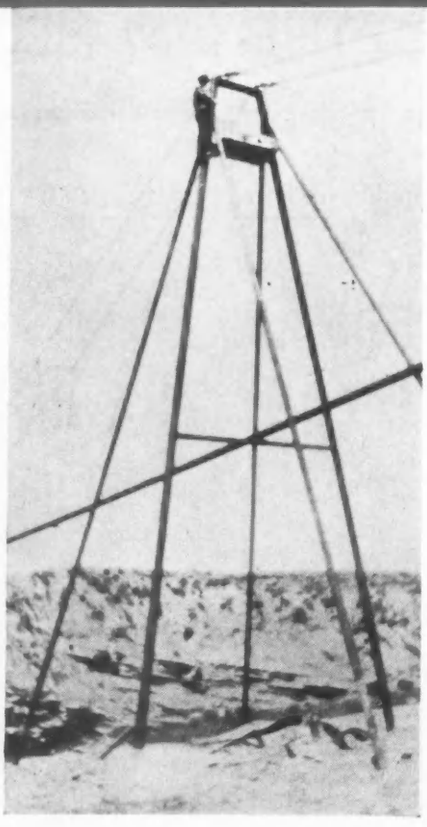
The cables were not swung directly under the pipe, but were carried some six to 15 feet above the carrier pipe, which was supported by means of slings made of ¾-inch sucker rods bolted into shaped pieces of ½ x 3-inch flat iron, and connected to the supporting cables by clips made of the sucker-rod material. This method of suspension prevents excessive wear on the cables and prevents fraying of the strands.

About six weeks of work were required to complete the span and run the line between connections bringing the new gravity flow line into service. Ben H. Szekula of Sinclair-Wyoming Company was the principal welder on the towers, while the line was laid and welded by M. Goffer and J. E. Conner, pipe line welders for Sinclair-Wyoming.

The towers were set in place and the supporting cables strung before work on the line was gotten underway. Allowing time for the towers to become firmly set in position, the pipe for the carrier line was laid in a continuous string on the eastern bank of the creek, which at this point runs in a generally north-south line, and completely welded before being placed in position. A special bull-plug of six-inch pipe with an 18-inch taper was then constructed. The line crew inserted a ¾-inch sand line in the end of the plug, which was then welded to the pipe string and the cable connected to the winch truck on the opposite bank. With an action similar to threading a gigantic needle or cleaning a gun with the old reliable kit involving a string and a wire brush, the pipe was then snaked across the intervening spaces between the towers and slung into place by means of the sucker-rod slings.

Provides Gravity Flow

The line gives an unbroken gravity flow over the 2285 foot length and a steady drop, which amounts to some 50 feet from the producing wells to the main pumps. Its manner of construction and bracing are calculated to give service practically free from maintenance necessities for the life of the line. The line is swung sufficiently above the creek bed to be safely out of reach of any cloud burst flood which might sweep the usually arid area, while the method of construction of the towers and braces, as well as the means of anchoring the supporting cables, leaves no possibility open for slipping and consequent sagging of the line to cause possible breaks.



The center tower, rising 50 feet above ground level, carries a large portion of the weight burden. Note the use of sucker rod supporting slings to the left of the tower.

MEN IN THE INDUSTRY'S NEWS

M. C. ISRAELSKY COMPLETES 13 YEARS OF PALEONTOLOGICAL WORK ON THE TEXAS-LOUISIANA GULF COAST

TWO YEARS AFTER GRADUATING HE MOVED TO HOUSTON

M. C. ISRAELSKY of Houston, paleontologist for United Gas System, this year will round out 13 years of paleontological work in the Texas and Louisiana Gulf Coast.

Graduating from the University of California in 1922, Israelsky entered the Museum of Paleontology at the university the following year as research assistant. In 1924 he was assistant curator in the Department of Paleontology at the California Academy of Science. That same year, 1924, he moved to Houston as paleontologist for Rycade Oil Corporation. In 1925, he went with Humble Oil & Refining Company. The following year he moved to Shreveport as paleontologist for Standard Oil Company of Louisiana. In 1927, he took the position of chief paleontologist with the United Gas System, where he has remained.

Israelsky is a past president of the Society of Economic Paleontologists and Mineralogists and of the Houston Geological Society. He also is a member of the American Association of Petroleum Geologists, the California Academy of Science, and the National Geographic Society.

During the course of his professional career, Israelsky has written nine papers, all published by the American Association of Petroleum Geologists. Generally considered the most important of these nine papers is his "Coastal Plain Stratigraphic Nomenclature," published in 1933.

M. C. ISRAELSKY

FRANK G. MOFFETT, JR., of Houston, Texas, has accepted a position with the Standard Oil Company of New Jersey at the company's offices in Caripito, Venezuela. It has been announced that he will leave for Caripito shortly.

J. HARRY WOOD, vice president and general manager of the Atlantic Pipe Line Company, has returned to headquarters at Dallas after spending several weeks in northern Pennsylvania and western New York with officials of the Keystone Pipe Line Company, an affiliated unit. The latter is building about 220 miles of gasoline line in expanding its facilities in the above two states.

JACK ROWAN, with Rowan and Hope, Inc., of San Antonio, has left for Poza Rica, in the State of Vera Cruz, Mexico, where he will supervise the drilling of either two or four wells to be drilled under a contract made by this concern with the Mexican government. The government purchased two new steam rotary rigs and have moved them into location for the drilling of the tests, which likely will be to a maximum of 2400 metres. Drillers are being provided by the drilling concern, other labor being obtained in Mexico. Rowan is expected to be there for at least one year.

J. A. JONES and T. L. Wark recently were appointed assistant vice presidents of Tide Water Associated Oil Company. Jones has been with the Associated division of the company since 1902 and for several years served as production manager. Wark, who has been with the company since 1920, has been acting as assistant to L. C. Decius, vice president in charge of production.

WALLACE THOMPSON, chief geologist for General Crude Oil Company, Houston, visited Dallas last week in connection with the drilling of a group of wildcats in West Texas.

H. B. SIMCOX, manager of the Fort Worth producing division of Continental Oil Company, accompanied by his family, is vacationing in Colorado.

F. W. HERTEL, formerly assistant superintendent for Tide Water Associated Oil Company at Ventura, California, has been made superintendent of the Santa Maria and Ventura divisions of the Associated Oil Company division of Tide Water Associated Oil Company.

L. C. H. CHASE, in charge of the stocks and shipping department of Cia. Mexicana de Petroleo "El Aguila," S. A., has returned to headquarters at Tampico after several months in England.

L. D. COADY, assistant to the vice president in charge of the Dallas office of Atlantic Petroleum Purchasing Corporation, has been transferred to Philadelphia to become assistant to the president. E. P. Fritz of the land department of the Atlantic Refining Company will succeed Coady at Dallas.

MARTIN MEARS, who has served in the dual capacity of superintendent of drilling and superintendent of the Ventura and Santa Maria divisions of the Associated division of Tide Water Associated Oil Company in California, has been placed in full charge of all drilling operations of the Associated division of the company.

EARL N. KERSEY, master mechanic of Mexican Gulf Oil Company at Tampico, Mexico, is spending a vacation in San Antonio, Texas, with his family.

C. E. WARE is the father of a twin boy and girl. Ware is associated with Cities Service Oil Company at Ponca City, Oklahoma.

M. M. HARDIN, of Indian Territory Illuminating Oil Company, Oklahoma City, has a new baby daughter.

CLYDE BOERR, of Hall & Briscoe, Inc., Oklahoma City, has added a baby boy to his family.

ARTHUR C. BECKNER, chief engineer at the Hewitt station of Oklahoma Pipe Line Company, has been awarded a 30-year service button.

SIDNEY W. WILLIS, geologist for Carter Oil Company at Ponca City, Oklahoma, has received a 20-year service button.

GILBERT G. WRIGHTEMAN, chemist with Humble Oil & Refining Company, has purchased a new home in Houston.

JOE A. SMITH, of Humble Oil & Refining Company's transportation department, is the owner of a new Houston home.

REPRESENTATIVE SAMUEL B. PETTENGILL of Indiana, member of the Cole committee which two years ago investigated the oil industry and author of the book "Hot Oil" in which the studies of the committee were summarized, announced this week that when his present term in Congress expires next year he will not be a candidate for re-election but will retire to practice law.

Elected in 1930, Pettengill has served continuously in Congress for four terms. He has been a prominent member of the House Interstate Commerce Committee, which is in charge of legislation relating to the oil industry, and was active in securing Congressional approval of the Interstate Oil Compact.

In the oil industry, the Congressman became a prominent figure several years ago when control legislation was actively agitated in Congress and was instrumental in defeating proposals for federal regulation. As a member of the Cole subcommittee, he visited the leading pro-

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ducing areas and discussed conditions with prominent members of the oil industry, reaching the conclusion that attempts to run the industry from Washington were not in the best interests of either the country or the industry.

E. R. TURNER, of the Pan-American Production Company, Houston, Texas, has returned to his desk after completing an extended business trip to New York.

PHIL DAVISS, scout for Tide Water Associated Oil Company, East Texas, was transferred from Tyler to Houston, where he will scout the Texas Gulf Coast territory.

J. CRESWELL has been transferred from the production department of Tide Water Associated Oil Company, Cayuga, to work out of the Tyler office, scouting the East Texas district.

MURRAY M. DOAN is due to return to Tulsa about October 1 from Colorado Springs, Colorado, where he is recuperating after a serious illness.

LOY J. SHELTON was elected president of The Texaco Tulsans last week, a newly formed employe's organization in The Texas Company. Other officers include Joe A. Hale, first vice president; Guy L. Nichols, second vice president; Ethel Colburn, third vice president; Teresa Barbour, secretary; Frank Cox, financial secretary, and Reno Borne, treasurer.

J. H. PAGE, Tulsa mining and petroleum engineer, and **J. S. HAELY,** repressuring engineer of Olean, N. Y., have been named assistants to E. G. Dahlgren, director of the conservation department of the Kansas Corporation Commission.

C. H. LIEB, president of Carter Oil Company, Tulsa, left the city last week for Terre Haute, Indiana, where he will show a group of Standard Oil Company of New Jersey officials through Illinois and Indiana oil fields. The party will then go to Kansas, Oklahoma, North Louisiana, Northeast Texas and Southwest Arkansas.

BRIGADIER GENERAL JAMES G. STEESE, president of Guajillo Corporation, San Antonio, is spending the late summer in Alaska, where he is superintending development of a gold mine. Steese will return to San Antonio this winter to assume his regular duties as president of the independent producing concern.

GEORGE H. SHEPPARD, state comptroller of Texas, in an address before the Houston Petroleum Marketers' Association annual picnic, stated that nearly a million persons in Texas were directly or indirectly benefiting from oil pay rolls. He mentioned in this connection that Texas produces 45 percent of the country's oil.

M. C. McGEHEE, JR., president of Texas Gulf Producing Company, Houston, is spending his vacation in Colorado.

C. J. JOHN, scout in the Corpus Christi area for the Pure Oil Company, has been transferred to Olney, Illinois.

BILL JOHNSON, independent operator of Tulsa, Oklahoma, visited his brother Ralph, in Houston recently.

SAM WILLIAMS, Phillips Petroleum Company, Bartlesville, Oklahoma, recently returned from Colorado, where he spent his vacation.

ACE CLINGMAN, formerly with Gillespie & Moore, drilling contractors, in the Illinois coal basin area, has been named drilling supervisor for Kingwood Oil Company and will make his headquarters in Flora, Illinois.

HUGO F. SEITZ, Vacuum Oil Company official in Shanghai, is in a position of safety according to word received by his mother, Mrs. Amelia Seitz, of Dayton, Ohio.

H. C. GRIMSLEY, division manager of American Oil Company at South Roanoke, Virginia, has resigned his position and will move to Pasadena, California, with his family.

ARTHUR EYVASION, consulting engineer, Tulsa, Oklahoma, will have supervision of construction of East Texas Refining Company's projected casinghead plant in the Miller County, Arkansas, extension of Rodessa.

J. V. McCONNELL, Shreveport independent oil operator, is spending a vacation in New Mexico.

MARION C. BUBENZER, engineer for Northwest Louisiana Gas Company, Shreveport, has returned from a vacation in Colorado.

DR. T. W. WILLIAMS, geologist of Calgary, Alberta, is conducting exploration work in the Brazeau area for Panama Syndicate of Medicine Hat, which contemplates development work in this area.

HOMER E. GREEN, Ohio operator who brought in Plains Petroleum Corporation's No. 1 in the Taber field of Alberta, near the international boundary, has returned to Lethbridge, Alberta.

O. M. WEBB, Sunburst, Montana, superintendent of International Refining Company and International Pipe Line Company, was a visitor in Calgary, Alberta, last week.

J. L. TALLMAN, D. E. Richardson and L. R. Tallman have organized the Richardson Oil & Gas Company to prospect, explore and drill for oil and gas. Head offices of the company will be maintained in Shelbyville, Illinois.

ARTHUR C. SIMMONS, Creighton S. Andrews and Esther P. Prentiss have organized the Simmons Oil Corporation of Bradford, Pennsylvania, to "carry on the business of producing oil, gas and minerals."

T. J. BUSH, sub-foreman for Carter Oil Company, Tulsa, Oklahoma, has become connected with the Lago Petroleum Company at Maracaibo, Venezuela. Others formerly with Carter who have joined the latter company also, are: Daniel B. Lesh, Jr., roustabout at Healdton, Oklahoma, and Williard C. Yandell at South Burbank, Oklahoma.

RAY SMITH, foreman for Ohio Oil Company, Tulsa, Oklahoma, is back from a vacation, which he spent in New Mexico.

CHARLIE HOFFMAN, with the Southland Royalty Company at Fort Worth, was visiting in Houston, Texas.

JOE V. HAYWOOD, field clerk for Carter Oil Company, Oklahoma, was recently transferred to Standard Oil Company of Venezuela at Maracaibo, Venezuela.

FORREST W. HOOD will be in charge of the newly opened Ohio Oil Company's district office at Enid, Oklahoma.

FRANK CAMPBELL, independent operator of Houston, Texas, has recuperated from injuries which he received in an automobile accident several weeks ago.

R. H. FELTNER, independent operator of San Antonio, Texas, was a recent visitor in Houston, Texas.

REGINALD G. RYAN, consulting geologist of Baton Rouge, Louisiana, has recently completed a new home in University Gardens in that city.

F. X. BOSTICK, geologist of Houston, Texas, addressed members of the Houston Geological Society at their first weekly fall meeting, Thursday noon, September 3.

FRANK S. HORNE, superintendent of the Wichita, Kansas, refinery for Barnsdall Refining Corporation, Tulsa, Oklahoma, has been transferred to a similar position at Barnsdall, Oklahoma.

DIED:

O. F. THOMPSON, 78, Bradford, Pennsylvania, connected with the Associated Producers Company for 44 years, died August 30 at his home after a long illness. He had been a director and general superintendent of the company. Surviving are two daughters and one son.

DENVER CUTSHAW, 22, rig builder of Gladwin, Michigan, died August 28 in an Alma hospital from injuries suffered four days earlier when he fell from a derrick.

T. O. CREMIN, 67, well known oil operator of Tulsa, Oklahoma, died at his home in Tulsa on September 2. He is survived by one daughter and a son.

EDWARD F. PINK, president of The Cambridge Wire Cloth Company, Cambridge, Maryland, died on Monday, August 23.

CHARLES J. PAYTON, 62, traffic manager for Sinclair Prairie Oil Company at Tulsa, died August 28 following an extended illness. Payton, a native of Houston, Texas, first worked in a printing shop in that city. Some time later he became a messenger for the H. & T. C. Railroad at Houston, remaining an employe of the traffic department for the next 18 years. Following varied positions in other railroads in the south and middle west, Payton joined the traffic department of the old Sinclair Oil Company at Chicago in 1917, and in 1919 was sent to Vinta, Oklahoma, as traffic representative. After having been recalled to Chicago for a brief period, he was transferred to Tulsa in 1920 as traffic manager and lived here until his death. Surviving are his widow, a sister and two step-sons. Funeral services were held at Tulsa August 31 with interment at Rose Hill cemetery.

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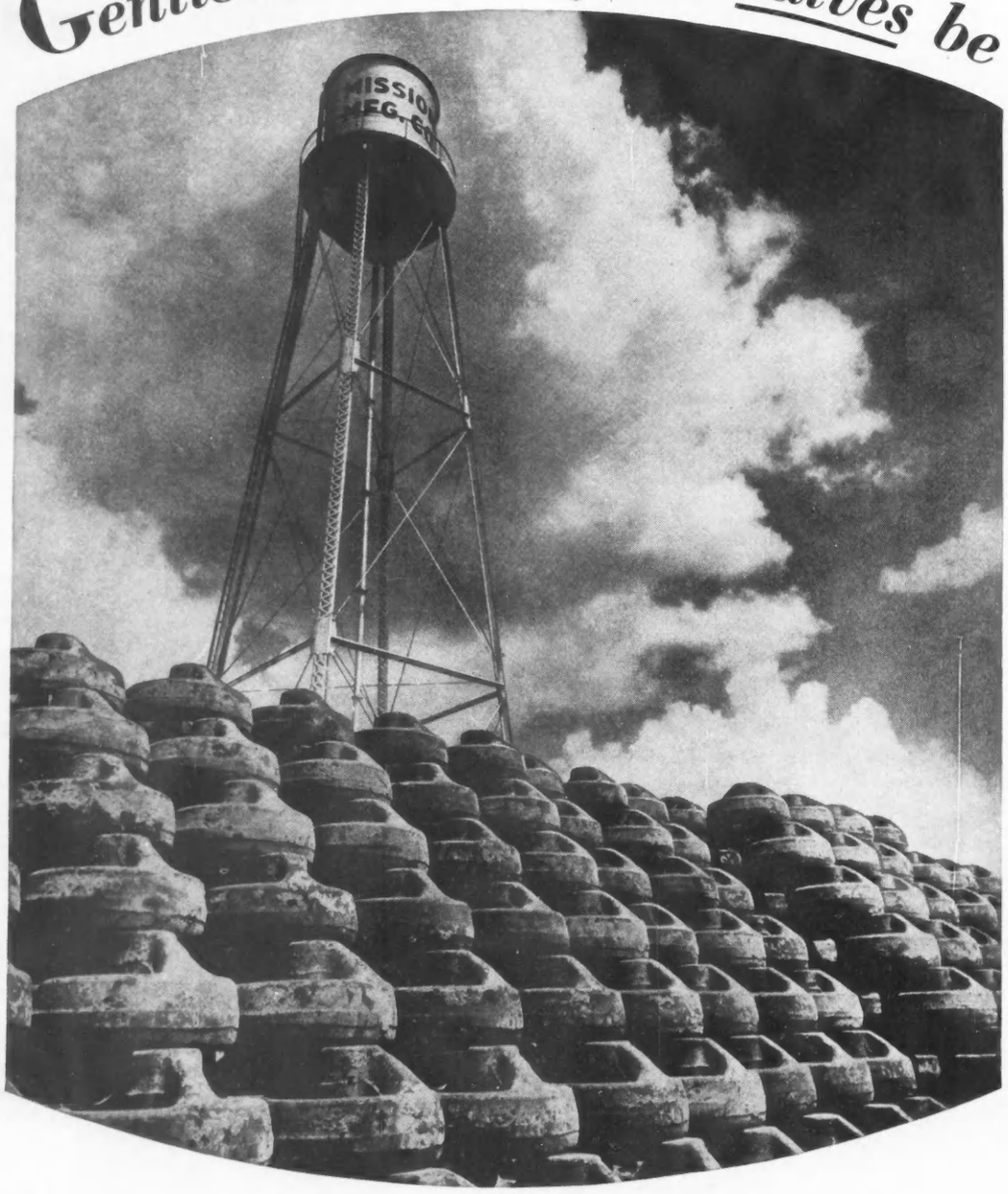

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Markets Unsteady

PENNSYLVANIA CRUDE CUT BUT OTHER PRICES HOLD

ALTHOUGH prices continue generally unchanged at the levels that have prevailed for several weeks, the markets lately have reflected perceptibly the ill effects of too much crude oil production and the operation of refineries at the greatest level of all times.

The reductions of 22 to 27 cents a barrel September 1 in prices of Pennsylvania grade crudes were generally regarded as reflecting local rather than national conditions. But the reductions were nevertheless significant, indicating that conditions in the industry lately have leaned toward the destructive rather than the constructive side.

The lower Pennsylvania prices were initiated by South Penn Oil Company, largest purchaser in the region. The new prices are: $2.60 a barrel for Bradford field, down 22 cents from the previous posting; $2.30 for Southwest Pennsylvania lines, down 27 cents; $2.25 for Eureka pipe lines, down 27 cents; and $2.10 for Buckeye lines, also down 27 cents.

Crude oil production, under the high allowables that prevailed in August, has continued to increase each week, setting new all-time records, successively. This high output has resulted in further announcements by pipe line companies indicating that they propose to prorate purchases, since they do not require so much oil.

Among the most recent announcements of this kind was that by Humble Pipe Line Company, in which it indicated that it will reduce its purchases in the Talco field, Northeastern Texas, to a total of 20,000 barrels per day. The company stated it had been getting more oil than it needed to meet its requirement for this particular grade of oil.

It has been threatened, also, that crude oil purchases in New Mexico may be prorated, if production is not brought more nearly in line with market requirements.

The pipe line systems serving New Mexico and West Texas have been crowded to capacity in recent months under the high allowables permitted in those districts. Practically all available field tankage has been employed by the pipe line companies in order to handle the exceptionally large volumes of crude oil that they have been purchasing lately.

It appears that crude oil production in New Mexico and West Texas has risen about as high as it can go unless more pipe line capacity is provided.

In recent weeks the proration of crude oil purchases was initiated in a Kansas county, and a similar plan was announced for one of the North Louisiana fields.

Refined Market Unsteady

While the heavy production of crude oil has resulted in difficulties in the crude market, the markets for refined oils, similarly, have been unsteady lately, in part because of the high crude production and also because of the high output of the refineries.

In the week ended August 28, crude oil runs to stills averaged 3,425,000 barrels daily, which exactly equaled the all-time peak that was set in the week ended July 31.

Gasoline Stock Decline Small

With refinery operations at this high level, gasoline production lately has exceeded market requirements, and a smaller than seasonal decline in gasoline stocks has occurred. In the week ended August 28, gasoline stocks in the United States declined only 263,000 barrels, whereas in the previous week the reduction was considerably more than 1,000,000 barrels. The total inventories of gasoline on hand August 28 were 66,997,000 barrels.

That total was, however, fairly well justified by the present situation in gasoline consumption. The amount on hand was approximately 11 percent greater than the supply held one year ago. But such an increase over last year is warranted, for so far this year, gasoline demand has been running around 10 percent greater than last year.

Fuel Markets Strong

In the week ended August 28, the industry continued to increase its inventories of fuel oils, in preparation for the heavy demand that normally occurs in the fall and winter months. The total stocks of gas and fuel oil were increased 1,618,000 barrels, or to a total of 112,111,000 barrels.

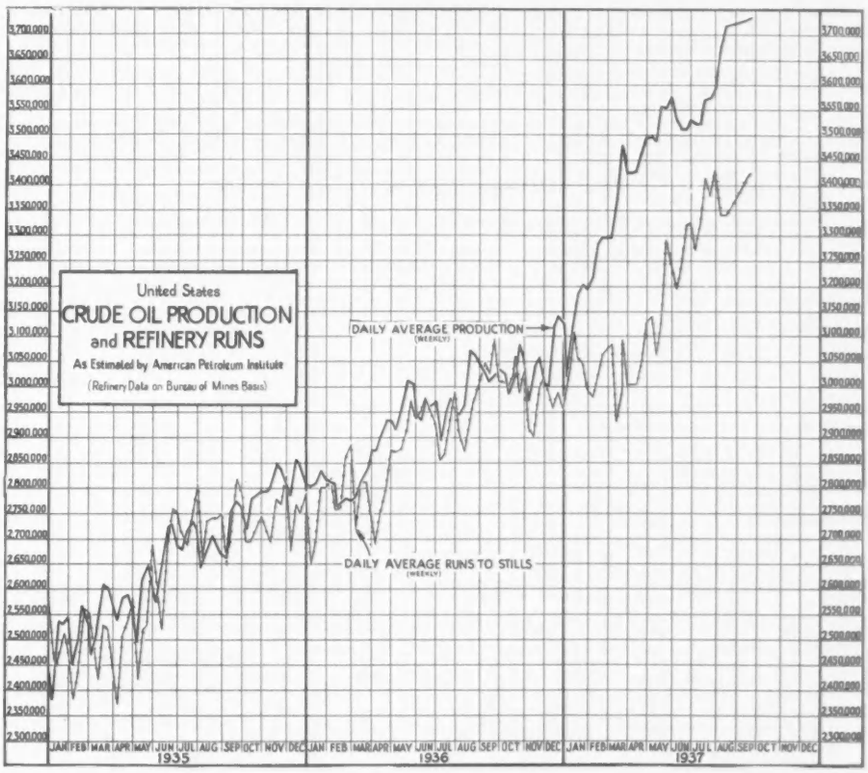
That figure was about a million barrels greater than the total on hand one year previously. Although the fuel oil stocks are thus only slightly larger than a year ago, the demand for these oils has been running this year considerably higher than last year. The fuel oil market naturally has been stimulated by this situation regarding inventories.

Gasoline Retailing Disturbed

The retail markets for gasoline have continued to manifest unsteadiness, as in several preceding weeks. Sub-normal service station postings prevail in East Texas, and in North Texas, at Dallas, Fort Worth, and other places, the posting has dropped to 11 and 12 cents a gallon for the third grade gasoline.

Retail price cutting has been prevailing lately also in various cities in the East, including Pittsburgh; and lower than normal retail prices are in effect throughout much of the state of Oklahoma.

Recent cutting of retail gasoline



prices in Texas and other sections of the Mid-Continent have been attributed at least in part, to an excess of gasoline at independent refineries in the East Texas refining district. That excess for a time was causing considerable dumping of gasoline on the market, and resulted in a softening of the market in a wide area of the Mid-Continent, including some southern Oklahoma centers, as well as Texas points. However, it is reported that by now major companies have practically eliminated the East Texas surplus.

General Outlook Better

Although the markets have been affected adversely lately by the high crude oil production and heavy refinery operations, the general outlook has been materially brightened by the plans for stricter control of crude oil production during September.

The leading oil producing states in prescribing allowables for September adhered very closely to the Bureau of Mines estimates of demand.

CRUDE OIL PRICES

Complete tables of prices paid for crude oil at the well in principal fields is shown on page 56. Hereafter this schedule will appear only in the first issue of each month.

Inventory Position Good

While the prospect for strict control of crude production for September is encouraging, hopefulness is generated also by the comparatively favorable inventory position of the industry. While gasoline stocks are in line with market demand, the stocks of crude oil also are justified by the consumer demand. The crude oil stocks are a little higher than at this time last year, but the gain that has occurred in the inventories has been more than justified by the increase, in the meantime, in petroleum consumption. While the crude oil stocks are only a few million barrels greater than at this time last year, the consumption of petroleum has been running this year about 11 percent higher than last year.

Although the markets were helped last week by the prospect for stricter control of production, as well as by the generally favorable inventory situation and outlook, a further factor tending to stabilize the market was the impending holiday. In preparation for the Labor Day holiday, some new business was stimulated in the open market, while contract shipments continued normal.

Burning Oils in Demand

Probably the strongest feature of the market was the activity in light fuel oils. These oils were in active demand in the Mid-Continent during the week, and supplies were reported to be closely held. Many refiners are continuing to store these oils for future demand of their contract customers. The prices of fuel oils are steady and are tending to move higher.

Mid-Continent Prices

Tank car prices at Mid-Continent refineries late last week were largely the same as for the preceding several weeks.

U. S. motor gasoline continued to range in the Oklahoma market about as follows: 62 octane and below, 5 to 5¼ cents a gallon; 63 to 67 octane, 5⅜ to 5¾ cents; and 68 to 70 octane, 6 to 6⅛ cents.

Corresponding prices in the Chicago market were: 4¾ to 5 cents, 5¼ to 5⅝ cents, and 5⅝ to 6 cents.

At East Texas refineries the most common product, 60-62, 400 end point gasoline, ranged from 5⅛ to 5¼ cents a gallon.

Kerosene prices f.o.b. Oklahoma refineries ranged from 4 to 4¼ cents a gallon for the 41-43 water white grade, and from 4¼ to 4⅜ cents for the 42-44 water white grade. Corresponding prices in the Chicago market were: 4 to 4⅛ cents and 4 to 4⅜ cents.

Trends of United States Production and Stocks

(Figures American Petroleum Institute, except Crude Stocks, Bureau of Mines)

WEEK ENDED	Crude Oil Production (Barrels Daily)	Crude Runs to Stills (Barrels Daily)	Crude Oil Stocks (Barrels)	Gasoline Stocks (Barrels)	Gas & Fuel Oil Stocks (Barrels)
January 2, 1937	3,121,400	3,030,000	287,659,000	62,661,000	106,330,000
January 30	3,194,050	2,995,000	285,384,000	69,540,000	102,078,000
February 27	3,296,100	3,085,000	288,121,000	78,786,000	99,534,000
March 27	3,431,300	3,060,000	293,587,000	*83,538,000	96,591,000
April 24	3,496,400	3,125,000	300,737,000	82,303,000	94,100,000
May 1	3,497,450	3,140,000	303,249,000	81,407,000	94,291,000
May 29	3,573,000	3,245,000	306,445,000	78,758,000	96,139,000
June 26	3,529,600	3,235,000	307,679,000	75,427,000	100,395,000
July 31	3,591,900	*3,425,000	308,250,000	70,872,000	108,209,000
August 7	3,651,150	3,340,000	307,922,000	69,216,000	108,597,000
August 14	3,718,600	3,340,000	308,737,000	69,087,000	109,664,000
August 21	3,729,350	3,415,000	309,699,000	67,260,000	110,493,000
August 28	*3,731,450	*3,425,000	.....	66,997,000	112,111,000
August 29, 1936	3,032,050	3,050,000	301,786,000	60,433,000	110,995,000

All time peak.

Summary of Wells Completed in the United States Week Ending September 4, 1937

	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Total 1937	Total this Date 1936
Alabama	....	....	....	....	.....	1	2
Arkansas	8	6	....	2	3,397	77	71
California	24	18	1	5	5,720	953	739
Colorado	....	....	....	....	.....	8	9
Florida	....	....	....	....	.....	1	2
Illinois	13	9	....	4	5,675	127	4
Indiana	....	....	....	....	.....	84	143
Kansas	56	38	3	15	54,474	1,792	1,126
Kentucky	12	5	2	5	247	243	191
Louisiana	29	15	6	8	9,454	638	711
Michigan	27	23	1	3	5,895	632	534
Mississippi	....	....	....	....	.....	10	5
Montana	9	5	....	4	338	134	107
Nebraska	....	....	....	....	.....	....	....
New Mexico	11	11	....	....	10,715	484	394
New York	....	....	....	....	.....	10	....
Ohio	22	10	6	6	375	1,008	1,276
Oklahoma	43	34	0	9	7,611	2,155	2,004
Pennsylvania	7	3	4	....	845	129	....
Texas	349	275	6	68	528,526	10,364	8,567
Utah	....	....	....	....	.....	....	....
W. Virginia	14	4	7	3	14	614	465
Wyoming	....	....	....	....	.....	74	54
Total this week	624	456	36	132	633,286	19,538	16,404
Total last week	541	363	61	114	389,834	....	....
Total this year	19,538	13,563	1,569	4,406	16,411,281	....	....

Comparison of Permits Granted for New Wells

STATE	Week Ending Sept. 4	Total this Mo.	Total this Year	Total this Date Last Year	1936 Year Total
Arkansas	5	5	164	64	103
California	30	30	1,084	719	1,054
Louisiana	31	31	858	784	1,107
Kansas	51	51	1,882	1,223	1,873
Michigan	17	17	667	507	762
Oklahoma	43	43	2,003	1,993	2,594
Texas	302	302	12,404	10,179	15,582
Total	479	479	19,072	15,469	23,075

Holding Record High

UNITED STATES PRODUCTION UNCHANGED DURING WEEK

UNITED STATES crude oil production during the past week ended September 4, continued practically unchanged from the all-time record level of the week before, averaging 3,718,110 barrels daily in the new period, or 15 barrels a day less than in the preceding week.

Although the week embraced the opening days of September, it also included the closing days of August, and the large output consequently reflected further the comparatively high allowables of August. For September, stricter allowables have been prescribed by the leading producing states, and consequently the crude production is expected to come down more nearly in line with market requirements.

Although the crude production for the country last week was practically the same as in the previous week, minor fluctuations occurred for individual states, the changes counter-balancing each other.

Increases were shown by Texas and Oklahoma, while decreases occurred in Kansas, Louisiana, California, and New Mexico.

Texas last week averaged 1,551,400 barrels daily, or 9700 barrels a day more than in the previous week and 156,200 barrels a day more than the Bureau of Mines estimate of demand.

Oklahoma production was up 1,000 barrels at 642,525 daily, and exceeded the federal allocation 9125 barrels.

Kansas showed a decline of 8815 barrels, averaging 192,535 barrels a day, which was 7965 barrels a day less than the estimated demand.

Louisiana output was down 3200 barrels at 263,450 daily, and exceeded the Bureau of Mines recommendation 9550 barrels a day.

California last week averaged 668,000 barrels daily, 2,000 a day less than in the previous week and 46,200 more than the demand.

New Mexico production was down 50 barrels, averaging 114,000 barrels daily, or 13,200 more than the indicated demand.

Plant will process oil from Bellevue

Shreveport.—Co-Service Oils, Incorporated, has announced plans for a 500-barrel daily capacity lube plant to be built at Princeton, Louisiana, Bossier Parish, four miles southwest of the shallow Bellevue oil field that yields a heavy crude.

The plant's plans were designed by N. R. Price, former refinery manager for Shoreline Oil Company, Shreveport. Officers of the company building the plant are Douglas MacDonald, president and general manager. He was formerly with Bayou State Oil Company, Shreveport.

The plant will employ a continuous two-stage atmospheric and high vacuum distillation process, embodying several recently developed refining features and employing a new type continuous acid and clay contact treating method, with the latest vacuum filtering equipment.

Crude from Bellevue will be processed into high grade gas and Diesel oils, neutrals, motor oils, road oils, and flux. Arrangements have been made to process a semi-refined paraffin stock supplied by an associated Oklahoma refinery, enabling the Princeton plant to offer a pure paraffin motor oil in addition to the mixed oils of its own manufacture.

United States Crude Oil Production

Estimates Compiled by The OIL WEEKLY

DISTRICT OR STATE	Bureau of Mines Recommendation (Daily in Aug.)	ACTUAL PRODUCTION: BARRELS DAILY FOR WEEK ENDING	
		Sept. 4	Aug. 28
TEXAS—			
Texas Panhandle	.....	85,600	85,400
North Texas	.....	75,400	75,200
West Central Texas	.....	33,600	33,700
West Texas	.....	244,800	242,300
East Central Texas	.....	130,400	129,300
East Texas Field	.....	474,200	473,300
South Texas	.....	277,800	274,800
Texas Gulf Coast	.....	229,600	227,700
Total Texas	1,395,200	1,551,400	1,541,700
OKLAHOMA—			
Oklahoma City	.....	165,500	156,550
Seminole Area	.....	111,550	123,475
Crescent	.....	10,125	10,375
Lucien	.....	15,600	15,150
Fitts	.....	89,250	93,750
Edmund	.....	11,600	18,100
Moore	.....	12,500	11,825
Others	.....	219,650	212,300
Total Oklahoma	633,400	642,525	641,525
KANSAS—			
Ritz-Canton	.....	5,875	5,850
Chase	.....	6,725	7,300
Hollow-Nikkel	.....	2,775	2,800
Sedgwick	.....	4,025	3,925
Burrton	.....	14,500	14,525
Lorraine	.....	2,925	3,900
Russell County	.....	37,625	36,425
Silica	.....	18,460	22,400
Others	.....	99,625	104,225
Total Kansas	200,500	192,535	201,350
LOUISIANA—			
North Louisiana	.....	87,750	89,850
South Louisiana	.....	175,700	176,800
Total Louisiana	253,900	263,450	266,650
ARKANSAS	29,100	32,100	31,150
CALIFORNIA—			
Long Beach	.....	58,000	57,500
Santa Fe Springs	.....	43,300	43,000
Hungtington Beach	.....	35,200	35,500
Dominguez	.....	28,500	28,000
Inglewood	.....	14,500	16,500
Ventura Avenue	.....	35,000	33,500
Seal Beach	.....	9,000	9,000
Midway-Sunset	.....	72,000	72,000
Elwood	.....	8,000	8,000
Kettleman Hills	.....	79,000	79,500
Mountain View	.....	17,000	17,000
Playa del Rey	.....	8,200	8,200
Wilmington	.....	56,000	54,300
Others	.....	204,300	208,000
Total California	621,800	668,000	670,000
MOUNTAIN STATES—			
Wyoming	52,800	59,700	59,800
Montana	17,700	18,100	17,600
Colorado	4,900	4,700	5,300
Total Rocky Mountain States	75,400	82,500	82,700
NEW MEXICO	100,800	114,000	114,050
EASTERN STATES	121,900	124,200	123,800
MICHIGAN	39,900	47,400	45,200
Total United States	3,462,900	3,718,110	3,718,125

CRUDE OIL PRICE SCHEDULES

(Figures Revised to September 3, 1937)

MID-CONTINENT GRAVITY SCALE PRICES (Posted January 28, 1937)

(Some fields of Mid-Continent have flat price postings, and are shown separately.)

Gravity	Okla.-Kans.	North La.-Ark.	Rodessa, La.-Tex.	North & W. Cent. Tex.	East Cent. Tex.	Gray Co. Tex.	Carson Hutchinson Co. Tex.	[1]Conroe, Tex. Type	West Tex.-N. Mex.	[2]Gulf Coast (Tex.-La.)	[3]Some La. Gulf Areas	[4]Anahuac, Tex. Type	[5]Refugio, Tex. Type	[6]Mirando, Tex. Type
17–17.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	*$0.90	.....	.....	.....	.....
18–18.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.92	.....	.....	.....	.....
19–19.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.94	.....	.....	.....	.....
20–20.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.96	*$0.90	.....	*$1.01	*$0.96
21–21.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.98	.93	.....	1.03	.98
22–22.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.01	.96	.....	1.05	1.00
23–23.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.04	.99	.....	1.07	1.02
24–24.9	*$0.98	*$0.90	*$0.93	*$0.88	.....	.....	.....	.....	.....	1.07	1.02	.....	1.09	1.04
25–25.9	1.00	.92	95	.90	.....	.....	.....	.....	*$0.78	1.10	1.05	.....	1.11	1.06
26–26.9	1.02	.94	.97	.92	.....	.....	.....	.....	.80	1.13	1.08	.....	1.13	1.08
27–27.9	1.04	.96	.99	.94	.....	.....	.....	.....	.82	1.15	1.10	.....	1.15	1.10
28–28.9	1.06	.98	1.01	.96	*$1.03	.....	.....	*$1.20	.84	1.17	1.12	.....	1.17	1.12
29–29.9	1.08	1.00	1.03	.98	1.05	.....	.....	1.22	.86	1.19	1.14	.....	1.19	1.14
30–30.9	1.10	1.02	1.05	1.00	1.07	.....	.....	1.24	.88	1.21	1.16	$1.16	1.21	1.16
31–31.9	1.12	1.04	1.07	1.02	1.09	.....	.....	1.26	.90	1.23	1.18	1.18	1.23	1.18
32–32.9	1.14	1.06	1.09	1.04	1.11	.....	.....	1.28	.92	1.25	1.20	1.20	1.25	1.20
33–33.9	1.16	1.08	1.11	1.06	1.13	.....	.....	1.30	.94	1.27	1.22	1.22	1.27	1.22
34–34.9	1.18	1.10	1.13	1.08	1.15	*$0.96	*$0.91	1.32	.96	1.29	1.24	1.24	1.29	1.24
35–35.9	1.20	1.12	1.15	1.10	1.17	.98	.93	1.34	.98	1.31	1.26	1.26	1.31	1.26
36–36.9	1.22	1.14	1.17	1.12	1.19	1.00	.95	1.36	1.00	1.33	1.28	1.28	1.33	1.28
37–37.9	1.24	1.16	1.19	1.14	1.21	1.02	.97	1.38	1.02	1.35	1.30	1.30	1.35	1.30
38–38.9	1.26	1.18	1.21	1.16	1.23	1.04	.99	1.40	1.04	1.37	1.32	1.32	1.37	1.32
39–39.9	1.28	1.20	1.23	1.18	1.25	1.06	1.01	1.42	1.06	1.39	1.34	1.34	1.39	1.34
40 & Above	1.30	1.22	1.25	1.20	1.27	1.08	1.03	1.44	1.08	1.41	1.36	1.36	1.41	1.36

* Minimum price and applies also to purchases of lower gravity.

[1] Conroe, Tomball, Satsuma, Raccoon Bend Deep fields.

[2] Upper Texas Gulf Coast, including Goose Creek, Spindle Top, etc., and some fields of Louisiana Gulf Coast, including Black Bayou, White Castle, Vinton, Hackberry, etc.

[3] Choctaw, Darrow, Lockport, Iowa (Magnolia posting), Cameron Meadows, etc.

[4] Anahuac, Dickinson, Flour Bluff, Turtle Bay.

[5] Lower Texas Gulf Coast, including Refugio, Saxet, etc. Posted 7-6-37.

[6] Duval, Jim Hogg, Webb, and Zapata Counties; Heyser, Placedo fields. Posted 7-6-37.

Mid-Continent Flat Prices

	Flat Price	Date Posted
Arkansas:		
Smackover	$0.90	1-28-37
Louisiana:		
Garden Island	1.37	1-28-37
Lafitte	1.24	1-28-37
Texas:		
East Texas	1.35	5-22-37
Talco	.73	1-28-37
Livingston, Cleveland	1.27	1-28-37
Hardin	1.15	1-28-37
Van	1.10	1-28-37
Pettus	1.37	1-28-37
Pecos County	.91	1-28-37
Pecos Shallow	.81	1-28-37
Luling	1.00	1-28-37
Lytton Springs	1.12	1-28-37
Salt Flat, Darst Creek, Hilbig, Carroll, Clark, Zoboroski	1.09	1-28-37

Michigan Prices

Central Michigan	$1.27	7-24-37

Middle West Prices

Lima	$1.25	1-28-37
Illinois	1.35	1-28-37
Princeton	1.35	1-28-37
Western Kentucky	1.40	1-28-37

Rocky Mountain States Prices

	Flat Price	Date Posted
Elk Basin	$1.30	1-28-37
Frannie Light	.70	11- 4-36
Frannie Heavy	.62	11- 4-36
Grass Creek Light	1.30	1-28-37
Grass Creek Heavy	.62	11- 4-36
Hamilton Dome	.57	11- 4-36
Big Muddy	1.23	1-28-37
Rock Creek	1.20½	1-28-37
Sunburst	1.20	1-28-37
Lance Creek	.97	1-28-37
Osage	1.08	.....
Cat Creek	1.07	8-25-33
Cut Bank	1.35	6- 3-36
Pondera	1.05	9-29-33
Hogback	1.00	9- 8-33

Pennsylvania Prices

Bradford-National Transit	$2.60	9- 1-37
Sw. Pa. Pipe Line	2.30	9- 1-37
Eureka Pipe Line	2.25	9- 1-37
Buckeye Pipe Line	2.10	9- 1-37
Corning Grade	1.42	6- 7-37

Canada Prices

Petrolia	$2.10	9- 9-33
Oil Springs	2.17	9- 9-33

Mexico Prices

F.O.B. Tampico; net; U.S. Currency, buyer pays tax	$1.24	.....

Major Price Changes

	Penna. (Nat. Tr.)	Mid.-Cont. (36 Gr.)	Calif. (26 Gr.)
June 19, 1933	Up 10	Up 19	.....
June 26, 1933	Up 10	.....	Up 9 12
July 6, 1933	Up 13	Up 10	.....
July 17, 1933	Up 15	.....	.....
July 28, 1933	Up 15	.....	.....
August 11, 1933	Up 10	.....	.....
August 24, 1933	.....	Up 10	.....
August 30, 1933	Up 15	.....	.....
September 6, 1933	Up 10	Up 10	Up 15
September 8, 1933	.....	Up 15	.....
May 1, 1934	Up 10	.....	.....
November 6, 1934	Cut 25	.....	.....
December 6, 1934	Cut 25	.....	.....
January 4, 1935	Up 15	.....	.....
February 4, 1935	Up 15	.....	.....
May 16, 1935	Cut 15	.....	.....
June 26, 1935	Cut 15	.....	.....
July 16, 1935	Cut 10	.....	.....
August 29, 1935	.....	.....	Cut *†
September 6, 1935	Up 5	.....	.....
October 29, 1935	Up 15	.....	.....
November 1, 1935	.....	.....	Up *28
November 18, 1935	Up 15	.....	.....
December 6, 1935	.....	.....	Up *9
January 9, 1936	.....	Up 10	.....
January 13, 1936	Up 15	.....	.....
February 26, 1936	.....	.....	Up †5
December 28, 1936	Up 12	.....	.....
January 28, 1937	.....	Up 12	.....
February 24, 1937	Up 10	.....	.....
June 7, 1937	Up 15	.....	.....
September 1, 1937	Cut 22	.....	.....

* Signal Hill 26 gravity. † Seal Beach 26 gravity.

Crude Production Taxes

Oklahoma—Five percent of gross value less royalty interest.

Texas—2¾ cents or 2¾ percent, whichever is higher.

Louisiana—From four to 11 cents a barrel, depending upon gravity.

Arkansas—2.6 percent of gross market values.

Montana—Two percent of gross value at well and ⅜ of 1c per barrel.

New Mexico—Severance tax of 2 percent on oil and gas.

Wyoming and New Mexico—Production tax based upon state and county assessments.

California—.66443 mills per barrel of oil produced and 17.39 cents per acre on proved oil lands.

IN THE

Financial Field

Securities of oil companies move in sympathy with general market, which lately has been weak.

* * *

Survey shows that oil company earnings over a long period have been comparatively low.

OIL COMPANY securities lately have been following rather closely the general trend of the market. The market in general has continued indecisive and characterized by small volume of trading, and the recent efforts to rally have not been particularly successful.

The recent sympathy of oil company stocks with the general market is in contrast with conditions in recent months, when the oil shares showed greater than average strength. Heretofore, the oil stocks have been resistant in periods of decline and have tended to forge ahead in any rally that has occurred.

Some of the recent selling of oil company shares apparently has been carried out under the theory that the industry now is passing the peak of its business for the year and that the earnings for the rest of the year may show some let-down.

Switching Occurs

There has also been some switching from the stocks of one oil company to another, in cases where it has seemed that prices of certain stocks have gotten out of line with the general trend of oil shares.

The recent weakness of the market apparently has resulted from continued lack of confidence that business volumes will continue at the high levels that prevailed earlier this year. The weakness of stocks has been in sympathy, moreover, with sagging of the prices of various commodities, including cotton, copper, grain and other products.

Oil Earnings Commonly Low

As regards the recent action of oil company stocks, it is possible that enthusiasm which prevailed earlier in the year has been dampened to some extent by a report lately issued by the American Petroleum Institute, on oil company earnings over a long period. This survey showed that the industry in 1936 showed an increase in earnings over 1935, but that the return on invested capital in the industry was only 2.54 percent in 1936.

It should be noted in this connection, however, that profits for 1937 are running about 50 percent higher than those of 1936. Consequently, the results this year will be considerably better than those indicated by the report.

Return Under 5 Percent

Nevertheless, the report showed that over a long period the earnings of the industry have been comparatively low. The earnings for the whole industry have not exceeded 5 percent in any year since 1921, and deficits were reported in three recent years, 1931, 1932, and 1933. The average annual earnings of the industry for the 16 years from 1921 to1936 were only 1.43 percent on the invested capital. The relatively low return on the investment has occurred despite the fact that the industry has steadily expanded, in the meantime. Factors that have tended to hold down the return include: increased competition, low prices of oil, rapid obsolescence of equipment, and steadily mounting taxes.

The figure of 2.54 percent shown as the return on the investment of the industry for 1936 was based on figures showing that the investment total was $13,775,000,000 and that the net earnings for the year were $349,664,240.

Tax on Profits Studied

Planning to make recommendations in November for a general revision of the tax laws, the United States Treasury Department is studying the undistributed profits tax and the capital gains and losses section of the revenue act, so that it may offer comment on those levies.

The tax on undistributed profits has

CALIFORNIA CRUDE OIL PRICES (Posted February 26, 1936).

(All gravities above those quoted take highest prices of that field.)

Gravity	Signal Hill	Seal Beach Alamitos Heights	Huntington Beach	Inglewood	Playa Del Rey	Olinda Brea Canyon	Athens Rosecrans	Elwood Terrace	Torrance	Richfield	Whittier East Coyote La Habra	Montebello	West Coyote Hills	Santa Fe Springs	New Hall McKittrick Kern River Round Mountain	Mountain View	Midway-Sunset Buena Vista Hills Elk Hills	Lost Hills	Coalinga	Wheeler Ridge
14-14.9	$.80	$.79	$.78	$.79	$.80	$.76	....	....	$.80	$.76	$.76	$.77	$.78	.....	$.70	....	$.70	$.70	$.70	....
15-15.9	.80	.79	.78	.79	.80	.76	....	....	.80	.76	.76	.77	.78	.....	.70	....	.70	.70	.70	....
16-16.9	.80	.79	.78	.79	.80	.76	....	....	.80	.76	.76	.77	.78	.....	.70	....	.70	.70	.70	....
17-17.9	.80	.79	.78	.81	.80	.76	....	....	.80	.76	.76	.77	.78	.....	.70	....	.70	.70	.70	....
18-18.9	.80	.79	.78	.84	.80	.78	....	....	.82	.76	.76	.77	.78	.....	.70	....	.70	.70	.70	....
19-19.9	.82	.79	.82	.87	.84	.81	....	....	.85	.76	.78	.77	.78	.....	.70	$.70	.74	.74	.71	$.70
20-20.9	.85	.79	.85	.90	.88	.84	....	....	.88	.78	.82	.77	.80	.....	.....	.70	.78	.78	.72	.70
21-21.9	.88	.79	.89	.93	.93	.88	....	....	.91	.80	.85	.77	.84	$.78	.....	.73	.82	.82	.74	.70
22-22.9	.92	.82	.92	.96	.98	.92	....	....	.93	.84	.89	.79	.88	.78	.....	.77	.87	.86	.78	.72
23-23.9	.95	.86	.96	.99	1.02	.96	$.84	....	.96	.88	.93	.82	.92	.78	.....	.80	.92	.90	.82	.76
24-24.9	.99	.91	1.00	1.02	1.06	.99	.88	....	.99	.91	.96	.85	.96	.82	.....	.84	.97	.94	86	.79
25-25.9	1.03	.95	1.03	1.05	1.11	1.03	.93	....	1.02	.95	....	.89	.99	.86	.....	.88	1.01	.98	.90	.83
26-26.9	1.06	1.00	1.07	1.09	1.16	1.06	.98	....	1.05	.98	....	.92	1.03	.90	.....	.91	1.06	1.02	....	....
27-27.9	1.10	1.05	1.11	1.12	....	1.10	1.03	....	....	1.02	....	.96	1.06	.95	.....	.95	1.10	1.06	....	....
28-28.9	1.14	1.10	1.14	1.15	....	1.14	1.07	....	....	1.06	....	.99	1.10	.99	.....	.99	1.15	1.10	....	....
29-29.9	1.17	1.15	1.18	1.18	F.O.B.	1.17	1.12	....	....	1.09	....	1.03	1.14	1.03	.....	1.02	1.20	1.14	....	....
30-30.9	1.21	1.19	1.22	1.21	Pipe	1.21	1.17	F.O.B.	....	....	....	1.07	1.17	1.08	.....	1.06	1.25	1.18	....	....
31-31.9	....	.....	....	1.24	Line	1.24	1.22	Ship	Kettleman Hills			1.11	1.21	1.12	.....	1.09	1.20	....	....	....
32-32.9	....	.....	....	1.27	....	1.27	1.27	....				1.14	1.25	1.16	.....	1.13	1.34	....	....	....
33-33.9	....	.....	....	....	....	....	1.32	$1.28		1.19		1.18	1.28	1.20	.....	1.17	1.38	....	....	....
34-34.9	....	.....	....	....	....	....	1.37	1.32	....	1.23	....	1.22	1.32	1.25	.....	1.20	.....	....	....	....
35-35.9	....	.....	....	....	....	....	1.42	1.35	....	1.27	....	1.25	....	1.29	.....	....	.....	....	....	....
36-36.9	....	.....	....	....	....	....	1.46	1.39	....	1.31	....	1.29	....	1.33	.....	....	.....	....	....	....
37-37.9	....	.....	....	....	....	....	1.51	1.43	....	1.35	....	1.32	....	1.37	.....	....	.....	....	....	....
38-38.9	....	.....	....	....	....	....	1.56	....	....	1.39	....	1.36	....	1.42	.....	....	.....	....	....	....
39-39.9	....	.....	....	....	....	....	1.61	....	....	1.43	....	1.40	....	.....	.....	....	.....	....	....	....
40-40.9	....	.....	....	....	....	....	1.66	....	....	....	....	1.43	....	.....	.....	....	.....	....	....	....

been subjected to much adverse criticism from within the oil industry. The oil companies heretofore have been using substantial proportions of their profits for capital expenditures, plowing the earnings back into the business, but the new taxes on undistributed profits heavily penalizes that practice.

New Securities Offered

Largely because of that tax, some of the oil companies at present are finding that their working capital must be increased by offering additional securities.

Among the most recent announcements of this nature was that made by Phillips Petroleum Company, indicating that it proposes to offer to its stockholders, on a pro-rata basis, 444,905 shares of its common capital stock, at the ratio of one share of the new stock for each ten shares of the present stock held. It is contemplated that the new stock will be listed on the New York and San Francisco stock exchanges and that stockholders then may either exercise or sell their rights.

Proceeds from the sale of the Phillips Petroleum Company stock would be used for several purposes, including the following: (1) to reduce the current liabilities of the company that are capable of liquidation, (2) to reimburse the treasury of the company for a part of the capital expenditures made during the first six months of this year, and (3) to provide additional working capital. A part of the funds would be reserved to retire a part of the company's funded indebtedness when maturities occur, and possibly to anticipate such maturities.

The management of the Phillips company has pointed out that during the past two years business volumes were increased greatly, calling for continued expansion and improvement of plants and operating facilities.

Reports Made on Earnings

Additional information has become available lately on the earnings of oil companies. Plymouth Oil Company, for instance, has indicated that its net earnings for July of this year were 52 percent larger than the net earnings of that month last year. This important increase occurred, it was stated, despite heavier taxes, larger labor costs, and higher costs of materials.

For the first six months of this year, Plymouth Oil Company reported a net profit of $1,362,996, after usual deductions, which was 67 percent more than the profits for the similar period in 1936.

Phillips Petroleum Company in July of this year earned the highest net profit for any July in the history of the company, as sales of all products ran at record levels. For the first six months of this year, the Phillips company reported a net profit of $12,679,080, after usual deductions, which was 72 percent more than the profit in the similar period the previous year.

Phillips Petroleum Company, in line with its increased volume of business, will spend during this year approximately $30,000,000 for capital purposes, in all the divisions of the company's business. This is a slight increase over the expenditures made in 1936.

Kerlyn Oil Company, of Oklahoma City, has reported for the fiscal year ended June 30 a net profit of $266,512, or 41 cents a share on the Class A and Class B stocks outstanding. This compared with a net profit of $70,596 in the preceding 12 months. Officers of the company include Robert S. Kerr, president, and Robert Lynn, vice president.

Standard Gas & Electric Company and subsidiaries, exclusive of Deep Rock Oil Corporation and Beaver Valley Traction Company, reported for the 12 months ended June 30 a consolidated net income of $4,652,145, after deductions, compared with $3,340,902 in the preceding 12 months. For the six months ended June 30, the net income was $2,614,823, compared with $2,026,789.

Mrs. Edward L. Doheny, widow of the oil magnate, August 30 was elected president of Petroleum Securities Company, to succeed the late Robert M. Sands, who died while on a vacation in England last year.

Dividends Announced

Petroleum Corporation of America directors on August 24 declared a dividend of 50 cents a share. The company paid 40 cents on May 29 and the same amount last December 24.

Louisiana Land & Exploration Company directors at their meeting August 25 declared the regular quarterly dividend of 10 cents a share on the capital stock, payable September 15 to stockholders of record September 1.

South Penn Oil Corporation declared an extra dividend of 77½ cents a share and the regular quarterly dividend of 37½ cents, both payable September 30.

Japan Buys California Oil

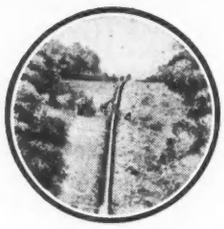
Los Angeles.—Tanker movement of crude oil and other petroleum products from California points during July exceeded in total any previous month for about seven years, due largely to movement of crude oil, gasoline and other products to Japan. Total movement in July was 7,143,378 barrels, and of this total, 1,734,422 barrels of crude oil moved, in addition to 1,459,126 barrels of fuel oil, 1,000,101 barrels of gas and Diesel oil and 2,075,835 barrels of gasoline.

California office of the Bureau of Mines does not mention country of destination, but Pacific foreign drew 1,516,050 barrels of crude oil, 1,088,024 barrels of fuel oil, 536,559 barrels of gas and Diesel oil, 997,600 barrels of gasoline and 312,482 barrels of kerosene. Most of this movement went to Japan, although some of it was shipped to Canada, on the West Coast.

Of the total tanker movement, 5,430,251 barrels moved from the Los Angeles custom district, while 1,676,761 barrels moved from San Francisco area. The shipment of package goods, petroleum products, reached a total of 393,627 barrels, of which 249,566 barrels was gasoline. Only a small portion of this movement went to either China or Japan.

For several years, Japan has been drawing strongly on California for most of its crude, fuel oil and gasoline needs, sending its own tankers for these cargoes. It is generally understood Japan has been filling its tanks during the past few years, mostly with fuel oils.

PIPE LINE NEWS



Start laying outlet for North Sweden.

* * *

Rodessa gathering systems enlarging.

Actual construction has been commenced on the Duval Pipe Line Company's pipe line from the North Sweden district of Duval County to Corpus Christi ship channel, a distance of 70 miles. Contract for the construction has been let to Williams Brothers Company of Tulsa, Oklahoma.

The first 22 miles of pipe arrived at Corpus Christi by boat and the remainder is en route. It will be strung along the right-of-way immediately upon arrival.

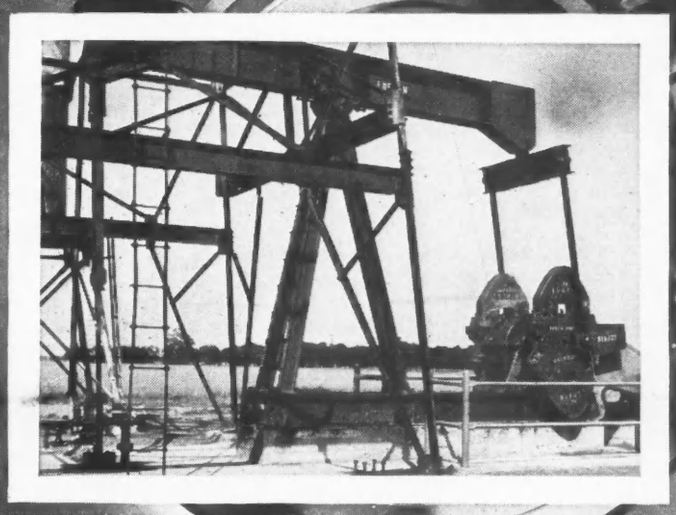
This line is expected to be ready for operation before the close of September. It will connect with the Republic terminal system, the Duval concern also being a Benedum & Trees organization.

Gulf Pipe Line Company is planning to extend its Rodessa line from the Cass County side of Rodessa to the Jefferson and Lodi parts of the field in Marion County, Texas, a distance of about 14 miles. Gulf was negotiating with operators at Lodi who had no connections before Gulf Oil Corporation completed a large well in the Jefferson area, R. Bennington Survey, last week.

Southern Liberty Pipe Line Company has completed a 10,000-barrel tank on Mid-Continent Petroleum Company's Sory lease in the A. de los Santos Coy Survey near Lodi and is running the allowables from Mid-Continent's producers there and from Fohs Oil Company's wells.

Standard Pipe Line Company will tie into the new wells of Roberts Brothers Drilling Company in Section 1-23n-16w, Caddo Parish, and 10-20-28, Miller County, Arkansas, in the north offshoot of Rodessa.

ENDURANCE!



LUFKIN TC-2A-31C PUMPING UNIT on the Carter Oil Company Seminole property typifies the many Hyatt equipped units which go on, for years, serving and saving in oil field production.

Because Hyatt Roller Bearings have greater endurance designed and built right into them, it is no wonder they are so generously employed. And, in addition to increasing the life span of the equipment they serve, they further save through the power and maintenance economies they effect. That's why machine manufacturers have such confidence in applying Hyatts and why the machine users place so much faith in Hyatt protection.

HYATT

Hyatt Bearings Division, General Motors Corporation, Newark, Detroit, San Francisco. Hyatt Roller Bearing Sales Company, Chicago and Pittsburgh.

Roller Bearings

WORLD DEVELOPMENT and TECHNOLOGY

GEOLOGISTS DISCUSS VARIED TOPICS AT MOSCOW MEET

Edited by
WM. V. GROSS, Associate Editor

(*Continued from page 16*)

ceedingly important in the discovery of new producing areas.

3. The greatest part of Azerbaijan territory is commercially oil bearing.

4. The Azerbaijan oil has a great vertical range. The main producing horizon is Pliocene, but shows have been recorded down to the lower Cretaceous. There are many producing horizons, especially in some regions such as Bibi Eibat, being up to 19 in number.

5. The structures are very complex and are intimately associated with mud volcanoes.

6. The chief productive series represents an accumulation of oil of secondary character. It has migrated from older source rocks (Oligocene and Miocene).

7. There are a total of 395 known structures in this area; 45 have been tested and 350 remain untested.•

Possibilities of Lower Volga

Madame N. G. Uspenskaya discussed the petroleum possibilities of the lower Volga River region and the Kalmyk Steppe area. The main points developed by her were:

1. From the standpoint of structure the region presents a transition from the Ural-Emba zone of salt domes to the folding zones of the Donetz Basin, and the Don-Medvedista anticline.

2. Geophysical investigation (magnetometer and electrical surveying) have revealed three large structural units:

a. A buried mountain ridge oriented along the Donbas-Mangyshlak line and traceable through the high and low Kalmyk Steppe to the Caspian Sea.

b. The Manych depression lying south of the buried ridge and complicated by a disjunctive dislocation (The Manych fault).

c. The zone of gravity minima and maxima analogous to those of the salt dome structures of the Ural-Emba region, located in the lower Volga and the northern part of the low Kalmyk Steppe.

3. Throughout the whole region numerous gas and some oil seeps occur, chiefly from Tertiary and Cretaceous deposits. Geologically, a study of the formations indicates possible source beds and traps.

Another large area in which oil showings have recently been discovered was discussed by V. T. Kutzev in his paper titled "Prospecting for Commercial Oil in the Ukrainian S. S. R." He pointed out that several salt domes have been discovered in the Ukraine, the most notable of which is the Romney Dome 150 kilometers southeast from Kiev) upon which two tests have been drilled. These two tests have gone to depths of 400 meters and 500 meters, the deeper having produced a total of 50 tons of live oil from a brecciated zone. An examination of cores indicated that this well was located in what appeared to be a fault zone. A new well has been started for a more favorable test. In this area, five salt domes have been located to date, trending in general from northwest to the southeast, corresponding to the direction of the axis of the Dneiper-Don depression.

Blokhin on Bashkiria

A. A. Blokhin read an interesting paper on the oil fields of the Bashkirian A.S.S.R. He noted that oil shows and seeps have been known in Bashkiria since the latter half of the eighteenth century. Commercial production was not established in the area until 1932, and in 1936 the yield from the Ishimbaevo area was approximately one million tons. He compared this area with the Permian Basin of West Texas. He further pointed out that in May, 1937, a new oil field, the Tuimaza field, was discovered near the western boundary of Bashkiria. He concluded therefore, that the vast territory from the foothills of the Urals to the western boundary of Bashkiria was potentially productive area in both the Permian and carboniferous.

It was apparent from discussion that the Soviet geologists are quite advanced in the use of geophysical instruments and are developing methods suitable to their conditions. They pointed out that they realized the necessity of raising the precision of readings, simplification of procedures and practical development of new methods now being studied in their laboratories.

The above papers were the outstanding papers delivered by the Soviet geologists on their geological methods and potential areas.

"America's Greatest Reserve"

A paper delivered by J. R. Russell and H. V. Howe (Americans) titled "Gulf Coast Geosyncline: America's Great Petroleum Reserve" attracted considerable attention on the part of the Russians as well as the foreigners. Justice cannot be done this paper in the short space given in this article. In general, the thesis developed was that the thick, petroliferous, Tertiary column of the Gulf Coast Geosyncline has originated under depositional conditions similar to those of today in southern Louisiana. The shifting position of the mouth of the Mississippi River in various geological times has naturally shifted the position of the delta deposits.

In the last 7 to 15 years, Russell and Howe's paper said, numerous wells have reached a depth of 10,000 feet, revealing the structure of the Gulf Coast region to be the landward side of this active geosyncline. Sediments have been deposited to a thickness of 30 to 40 thousand feet along a narrow zone paralleling the present shore. This deposition began in the Wilcox time of the Eocene. The shore line has advanced slowly gulfward and the position of the deltas have migrated laterally from time to time.

Gulf Was Shallow

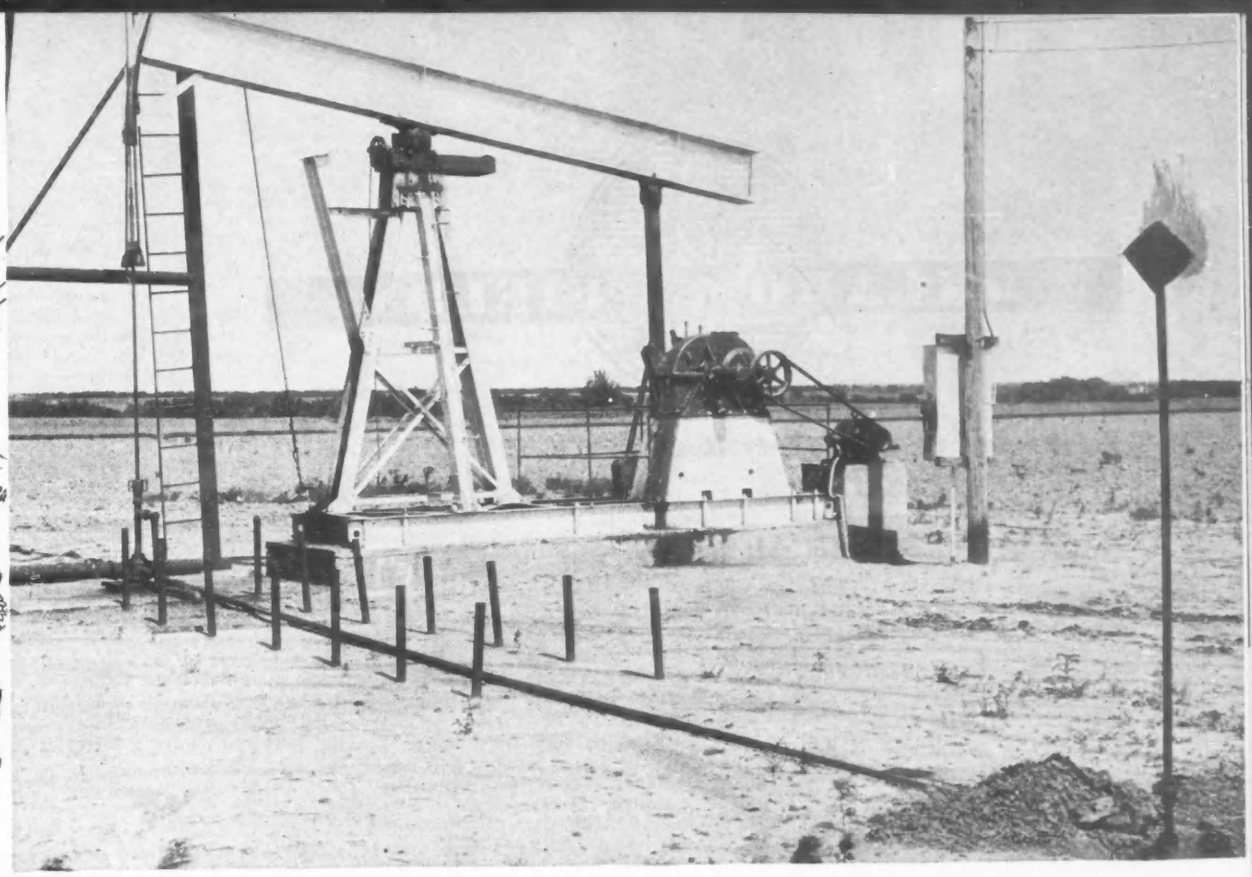
The Gulf of Mexico, which was originally a shallow sea, has subsided three to four times its original depth. The maximum present depth is approximately 12,000 feet. The conclusions drawn by the authors were that the most petroliferous sediments are those deposited on the outer edges of the delta (water carrying in plant and animal remains).

Also, insofar as the Gulf Coast region is underlain by salt, the change of local sedimentary load has provided an ever variable motive force, which in turn has given rise to salt domes and other petroliferous structures. The authors felt that the explanations given for the Gulf Coast area might yapply to other geosynclinal regions and offered this theory not only as the explanation of local thickening and subsidence of the Gulf floor, but also of the local accumulation of petroleum.

The papers briefly covered in this article were the most important delivered at the petroleum section of the congress.

While application for the congress of 1940 was made by Japan, France and England, the final decision was rendered in favor of England. The next international geological congress is to be held in London in 1940.

• This electrically operated unit, one of 35 in this pool, is pumping where free gas is available (note flame in picture). Producing formation: Mississippi lime. Depth: 2700 ft.



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OKLAHOMA FIELDS

To deepen Grant County discovery well.

* * *

Moore troubled with salt water.

Oklahoma City.—Carter Oil Company continued efforts to make a better producer of its new well in Grant County. In Cleveland County, operators in the Moore pool were being troubled with salt water intrusion and declining bottom-hole pressures.

Carter Oil Company et al's Crisman 1, C W½ SW NW 16-25n-3w, near Lamont in Grant County, was to core ahead from 5405 to 5408 feet. When opened at noon September 1 the well flowed 25 barrels of oil and 52 barrels of water. When reopened at midnight it flowed 57 barrels of oil and no water.

Despite salt water troubles at Moore, another producer was brought in there last week. It was Sinclair Prairie Oil Company's Holmes 2, SE NE SE 28-10n-2w, which drilled to 7285 feet in the Wilcox sand. It started off with a flow of 267 barrels of oil in one hour and had 15,000,000 cubic feet of gas. The gas dropped to 8,000,000 cubic feet before the hour was up, but was showing little water, despite the fact it was below the average water level for the area, between a minus 6100 and 6103 feet. The well will take a minimum allowable of 200 barrels of oil per day.

Carter Oil Company's Hall 1, NW SE SW 27-10n-2w, was acidized with 8000 gallons after plugging back from the Wilcox sand to Simpson dolomite at 7284 feet. On previous test the well made only 17 barrels of oil per hour on gas lift cutting 10 percent water.

Sinclair Prairie Oil Company's Peaches 6, NEc SE SW 21-10n-2w, was acidized with 10,000 gallons after perforating the casing with 180 shots. It is an old well.

Seven Wells Have Water

A generalized review of the salt water situation shows seven wells are troubled by the fluid, the cut ranging as high as 75 percent in some tests. Bottom hole chokes are being used to reduce the intrusion. Loss of pressure is troubling producers at the north end of the field, and many wells there are falling behind on their allowables as a result. Most operators feel the solution is in asking for lease-basis proration, and will place the proposition before the corporation commission at an early date.

Tide Water Associated Oil Company's Falke 1, NE NW NE 28-23n-2w, at the south end of the Billings pool of Noble County, reported a good showing last week and was preparing to run pipe. Top of the Wilcox sand was had at 4335 feet. It was bottomed at 4337 feet, two feet in the formation.

In the Logan County extension of the Lucien pool, W. R. Curry et al's Schlopp 2, SEc 32-20n-2w, was preparing to start potential. The well went into the Wilcox sand at 4897 feet and drilled to 5032 feet. When opened for five hours, it flowed 840 barrels of oil.

Northeast of Lexington in Cleveland County, Hollenback et al's Ward 1, SW SE NE 30-7n-1e, topped the Woodford at 6175 feet; topped the Hunton at 6300 feet; the Sylvan shale at 6410 feet and was drilling at 6430 feet with nothing showing.

Citra discovery gauges 203 barrels in 24 hours

Tulsa.—Little of interest was reported from the Tulsa district last week. The discovery producer in the Citra area of Hughes County was officially completed and was starting on its discovery right production of 15,000 barrels. In Fitts a few good producers were had. Two wells were drilling ahead below 3000 feet in the recently opened Roodhouse area, west of Fitts proper.

Carter Oil Company et al's Hamilton 1, C WL NE SW 33-4n-9e, which opened a new area near Citra in Hughes County several weeks ago, was officially completed for 203 barrels of oil in 24 hours. It was at a total depth of 5954 feet in Bromide.

Magnolia Petroleum Company's Metropolitan Life Insurance Company 36, SE NE SW 27-2n-7e, in the Fitts field, made a potential of 486 barrels of oil and 1,900,000 cubic feet of gas, producing from between 3660 and 4135 feet in the Viola lime. It made 172 barrels of oil on a 6-hour test.

Mid-Continent Petroleum Corporation's Statler 7, NWc SW 2-1n-7e, in the Jesse pool, was shut in after flowing 476 barrels of oil in 4 hours. The flow followed treatment with acid in the Hunton lime between 3758 and 4057 feet.

Mid-Continent's Statler 8, SE NW SW 2-1n-7e, cored from 3980 to 3985 feet and recovered a few inches of broken lime with no show and was coring ahead below 3985 feet in the Hunton lime.

Continental Oil Company's Brown 2, NWc NE 11-1n-7e, had top of a sand at 4719 feet and drilled to 4722 feet, but had not found top of the Bromide as yet. Operators found 1000 feet of water in the hole later and decided to plug back to 4719 feet and shut off the water.

Two more tests were drilling ahead in the Roodhouse area, where Roodhouse et al's Booth 1, SE NW SE 20-2n-6e, continued pumping tests from the Cromwell sand. Patsy Oil Company's Mayhue 1, NW NE SE 20-2n-6e, was drilling below 3140 feet, and Magnolia Petroleum Company's Mayhue 1, NW SW SW 20-2n-6e, topped the Wapanucka lime at 2790 feet and was drilling below 3140 feet. Considerable interest in the area, situated at the west end of the Franks graben, was displayed while Booth 1 was drilling earlier in the summer.

In Hughes County, north of Holdenville, Stanolind Oil & Gas Company and Amerada Petroleum Corporation's Williams 1, NEc SE 36-9n-8e, was a new producer. It is in the Adams pool and was showing for about 30 barrels of oil per hour on tests in the Misener sand at 4028 feet.

A disappointment was reported from Pottawatomie County at Atlantic Refining Company's Dooley 1, SEc NW 9-11n-5e, northeast of Shawnee. Both the Hunton lime and Wilcox sand failed to yield oil. Top of the Hunton was found at 4770 feet and top of the Wilcox sand was at 4917 feet. It was dry and abandoned.

Also in the Shawnee area, Indian States Oil Company's Goodman 1, NE NW NE 5-10n-4e, made a 24-hour flow of 212 barrels of oil from the Earlsboro sand. Nearby, Amerada Petroleum Corporation and Stanolind Oil & Gas Company's Riddle 3, NE NW NW 2-10n-5e, was to go on pump after swabbing 147 barrels of oil in 9 hours.

In Seminole County, south of Sasakwa, Stanolind and Amerada et al's Salina 1, SE NE NW 4-5n-6e, drilled to 3317 feet, then plugged back to 3295 feet where it was pulling tubing before drilling cement to see if water encroachment had been shut out.

Helmerich & Payne Drilling Company's Robinson 2-A, SEc NE 26-10n-10e, southwest of Weleetka in Okfuskee County, was to be shut in for a gas well after gauging a flow of 18,000,000 cubic feet of dry gas. Rock pressure was 780 pounds. It was not determined whether it was producing from the Gilcrease or Cromwell sand. Top of the formation was found at 3218 feet and it was drilled to a total depth of 3237 feet for completion.

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OKLAHOMA Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BECKHAM COUNTY—		
Bud Lewis, Douglas 1, cn se ne 21-8n-26w	*	2237
CADDO COUNTY—		
Ohio Oil, Marchand 5, nw se nw 2-5n-9w (pb 2395)	*	6775
CARTER COUNTY—		
Barnett Pet., M. Lucas 1, sw se nw 14-1s-3w	*	2615
Carlos Wagner, Brady 1, se nw nw 4-2s-2w	*	350
Carlock & Dexter, Tillis 1, sw sw se 4-4s-3w (otd 1044)	4	1083
Tillis 3, ne sw se 4-4s-3w (otd 1072)	5	1098
Sinclair Prairie, E. T. Richards 15, se se nw 9-4s-3w	87	1085
CLEVELAND COUNTY—		
Stanolind-Amerada, State 3, se ne sw 16-10n-2w	200	7273
Sinclair Prairie, Marvel 5, nw se ne 21-10n-2w	200	7245
COAL COUNTY—		
Carter, Thompson 1, se ne nw 34-2n-9e	45	6235
CREEK COUNTY—		
Tide Water Oil Co., L. Brown 5, ne nw ne 9-17n-7e (otd 2678)	32	2704
Shibley Oil, Campbell 4, ne nw nw 13-17n-7e	127	2009
GRANT COUNTY—		
Carter et al, Kolarikne, nw sw 4-26n-5w	*	5852
JACKSON COUNTY—		
Ace Gutowsky, Howard 1, ne sw nw 10-3n-19w	*	950
JEFFERSON COUNTY—		
Bridwell Oil Co., Deay 4, sw nw ne 30-6s-5w	392	1964
Circle Oil Co., Seay 51, se se sw 3-7s-5w	55	1100
Long-Yingling & Lauck, Seay 21, sw sw se 3-7s-5w	89	1270
Seay 23, sw sw se 3-7s-5w	146	1270
LINCOLN COUNTY—		
Stanolind & Amerada, Arinwine 3, sw nw se 35-15n-2e	930	5143
OKMULGEE COUNTY—		
Blackwell, Bolton 1, se se ne 36-10n-8e (otd 1747)	64	1753
OSAGE COUNTY—		
W. C. McBride, Inc., 1, sw nw nw 16-23n-10e	*	2225
Sidwell Drlg. Co., 4, se nw se 28-24n-11e (pb 1725)	½	2034
Magnolia, 10, se sw nw 11-26n-6e	100	2848
PAYNE COUNTY—		
Sand Spring Home et al, Wallace 1, se ne ne 5-19n-5e	65	3234
PONTOTOC COUNTY—		
Frances, Province 1, sw nw nw 2-1n-7e (pb 1872)	15	4230
Stanolind, Norris "E" 8, se sw se 25-2n-6e	2286	3654
Magnolia, B. Reeves 1, ne se ne 35-2n-6e	965	4270
Bishop, B. Simpson 5, n½ nw nw nw 28-2n-7e	95	2665
Skelly, Park College 23, ne ne nw 28-2n-7e	101	2610
Park 24, nw sw nw 28-2n-7e	141	2555
Moore, Thompson 2, se se se 33-2n-7e	22	4490
POTTAWATOMIE COUNTY—		
Magonlia, Jones "C" 1, ne sw ne 18-7n-4e	613	3991
Kilico, Hulsey 1, sw se sw 26-7n-4e	50	4262
SEMINOLE COUNTY—		
Ada Drlg., Anders 1A, nw nw nw 23-6n-6e	150	2355
J. E. Hall, Casey 1, se sw ne 30-6n-8e (pb 915)	*	1300
Winona, Barkus 1, sw se se 18-7n-8e	240	2997
Seminole O&G, Ong 1, se se ne 28-8n-7e	18	3213
Atlantic Refining Co., South Riddle 1, ne sw ne 2-10n-5e	240	4624
STEPHENS COUNTY—		
Wilkins, Robberson 3, se ne ne 15-2s-5w	3	940
George L. Pace, G. H. Woddward 1, sw se ne 14-2s-8w	*	2107
TILLMAN COUNTY—		
Gulf Oil, Badger 1, sw sw nw 5-1s-19w	5	2619
Gulf Oil Corp., Shirley 3, nw nw ne 6-1s-19w (pb 2577)	100	2622
TULSA COUNTY—		
Johnson Oil Ref. Co., Hayden 2, se se nw 31-19n-10w (pb 2281)	25	2287

*Failures; †Junked; ¶Million cu. ft. gas.

Carter starts offset to new Milroy strike

Ardmore.—Most interesting word from southern Oklahoma last week was that Carter Oil Company had made location for an east offset to its Milroy discovery well, Harley Community 1, C NE NE 24-2s-4w, in eastern Stephens County. The new test will be Carter Oil Company's Harley 1, C NE NW 19-2s-3w, just across the Carter County line, on exclusive Carter property.

Harley Community 1 is producing from Oolitic lime at 8175 feet, where it was given an acid treatment. It is waiting on pipe line connections. Rotary rig was being moved in for the new test.

Gulf Refining Company is laying a line to Indian Territory Illuminating Oil Company's Graham 1, NW SW NE 1-3s-19w, new Canyon lime producer in southwestern Tillman County. Oil from the test, which is 38 gravity, will be run to the Burkburnett, Texas, pipe line station. Production is from between 3074 and 3081 feet, and when last reported the well had swabbed 199 barrels of oil in 10 hours. During a 5-day period the well produced 1968 barrels of oil.

In the same district, Gulf Oil Corporation's Pritchard 1, SE NW SE 32-3s-16w, was drilling below 2760 feet, headed for the Canyon lime. It was drilling in mixed lime and shale.

In the Fox area of western Carter County, Gulf Oil Corporation's Smith Estate 1, C SW SW 26-2s-3w, was tak-

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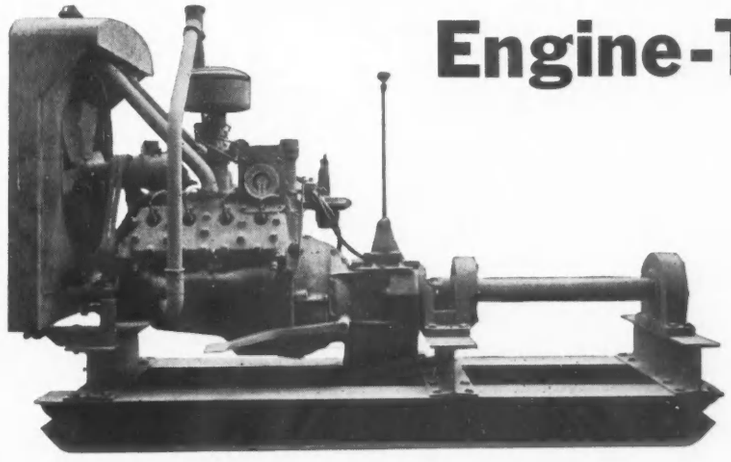

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ing a core between 4640 and 4650 feet in a chert streak found in the Hunton lime. It is reported running 211 feet higher on the Hunton than Carter Oil Company's Ruth Williams 1, C SW SW 27-2s-3w, discovery well of the deep pay there. Gulf Oil Corporation's Johnson 1, C SW NW 27-2s-3w, was waiting on cement while bottomed at 5560 feet. It was reported running 147 feet higher on the Viola lime than Ruth Williams 1.

The deepest test in the state today is Coline Oil Company's Johnson 1, SW SE NE 1-2n-8w, to the west of the Marlow area in Stephens County. The well was drilled to 9200 feet, possibly in the Pennsylvanian. Definite identification of the formation was not forthcoming from any of the Mid-Continent oil offices, however. Operators stated tests were started at the well, but were withholding information regarding their outcome.

Only three other tests in the state have drilled to a greater depth than Johnson 1, two in the Binger pool of Caddo County and the third in the Cement pool of the same county. First was Mid-Kansas Oil & Gas Company (now Ohio) and Ramsey Petroleum Company's Preston Culp 6, NWc NE 6-5n-9w, in the Cement field, which went to 10,079 feet. The other two were Denver Producing & Refining Company's Sah-Cam 1, SEc 33-10n-10w, Binger pool, drilled to 10,084 feet, and the same company's A-Dah-Noe 1, NW SW SW 34-10n-10w, which went to 11,320 feet, but was later plugged back to 10,125 feet. Both of the latter wells had small production.

Southwest of Johnson 1, another wildcat, Ed Parsons et al's Blake 1, C SW NW 22-2n-8w, was shut down pending completion of arrangements to drill ahead from its present depth of 4966 feet. It had a contract depth of 5000 feet. The well looked rather big on a drill stem test, but later showed for only 20 to 25 barrels. It is midway between the town of Marlow and the Nellie gas pool, opened in 1925. Deepest test there went to 4550 feet in the post Glenn rocks.

43 completions and starts in Oklahoma

Tulsa.—Completions and wells started ran a dead heat in Oklahoma last week, 43 for each classification. Among the completions were 34 producing wells, whose initial output reached only 7611 barrels. There were 9 dry holes. By counties the new wells were as follows: Carter 5; Creek 5; Garvin 1; Jackson 1; Jefferson 3; Kiowa 1; Lincoln 2; Logan 1; Noble 4; Okfuskee 1; Oklahoma 1; Okmulgee 1; Osage 4; Pontotoc 10; Seminole 2; Stephens 1.

Kansas completes 56 and starts 51

Wichita.—Completions outnumbered locations in Kansas fields last week, 56 to 51. The completions were divided among 36 producing wells with initial output of 54,474 barrels; 3 gas wells, and 15 dry holes. Distribution of the new locations by counties was: Barton 7; Chase 1; Cowley 2; Ellis 4; Elk 1; Grant 2; Greenwood 3; McPherson 2; Mead 1; Reno 1; Rice 9; Rush 3; Russell 5; Sedgwick 2; Stafford 3; Sumner 1; Woodson 1.

KANSAS FIELDS

Four new fields and many extensions.

* * *

New pools are in Rice, Pratt and Cowley Counties.

Wichita.—Continuing to maintain the high rate of activity and development established three weeks ago, Kansas last week reported four new producing areas, the first of which tends to create a tri-county pool. Another possible Siliceous lime pool was tapped in Pratt County and to the east, in Cowley County, a new Bartlesville sand pool was opened. One of Kansas' most orderly developments, the Bemis pool of Ellis County, was extended and other smaller pools edged out to broaden their producing limits.

September 3, Stanolind Oil & Gas Company's Hartnett 1, NWc SE 23-24s-11w, four miles east of Stafford in that County, thought to be in the Simpson sand at 3807 feet, had a hole full of oil and started flowing by heads, making 53 barrels of oil natural for four hours, flowing every 30 or 40 minutes. It was shut in for tankage and connections. Nearest production is the St. John pool 12 miles west.

Another tri-county pool may be established in Kansas within the week as operations were carried ahead at Bridgeport Machine Company and Turman Oil Company's Habiger 1, NWc 5-18s-10w, between the Bloomer pool of Barton County and the Stumps pool of Rice County. The well flowed 525 barrels of oil in seven hours while running tubing preparatory to acidizing the Lansing lime at 3018 feet. It was later acidized with 5000 gallons and was waiting on acid reaction. The lime was topped at 3001 feet.

Habiger 1 is one mile east of the Stumps pool and one mile southwest of the Bloomer pool, and is almost on the Ellsworth County line to the north. Location has been made for Habiger 2, NE NW NW 5-18s-10w, to the east of Habiger 1. Other companies interested in the area include Skelly Oil Company which holds offset acreage to the north and northwest. It made location for Zink 1, SWc 32-17s-10w, one location north of the new producer, in Ellsworth County. South of the Bridgeport acreage, Skelly has an 80-acre tract. Bridgeport also made location for Habiger 8, SW NW NW 5-18s-10w, a south offset to Habiger 1. Gulf Oil Corporation has holdings to the west.

A well which will probably be listed as a north extension for the Stumps pool is Transwestern Oil Company's Stumps 1, SWc 33-17s-10w, a semi-wildcat two locations north and in Ellsworth County, which was shut down for orders after pumping 210 barrels of oil in 15 hours from the Siliceous lime at 3267 feet. Production followed acidization with 2000 gallons. It dropped to seven barrels per hour after the acid treatment, indicating the northern limits of the field had been found.

New Cowley Field

Another new oil pool was opened in Cowley County, southern Kansas, last week at E. B. Shawer's Fee 1, NW NE SE 3-30s-4e, three miles northeast of the Rock pool. The test had drilled to 2806 feet in the Bartlesville sand and after having been shut in for several days was opened. Operators found it had filled to the top with oil. Only a small showing was found in the sand when it was encountered earlier in the week. It apparently will be good for 25 to 30 barrels of oil per day, but may improve as it is to be deepened a few feet after cleaning out.

Pratt County also looks to be getting a new oil pool, as Atlantic Refining Company, Skelly Oil Company and Cities Service Oil Company's Runyon 1, SW NW NE 11-27s-13w, a wildcat southeast of Iuka, had 2500 feet of oil in the hole, coming from the Siliceous lime between 4393 and 4397 feet. When last reported it was shut in for tankage and fishing for a liner.

The well had not looked so promising earlier in the week, only a slight production having been found in the Simpson at 4311 feet where it made 45 barrels of oil during a 9-hour test followiing acidization, first with 1000 and later with 3000 gallons.

Extend Kowalsky

Possible extension well for the Kowalsky pool of Reno County is Stanolind Oil & Gas Company's Schmid 1, SWc SE 35-19s-10w, one mile north of the pool. A core between 3295 and 3298 feet was saturated, coming from the Siliceous lime. Top of the formation was at 3295 feet. From all indications it will be completed there as a commercial producer.

The same operators are busy completing Kowalsky 2, ¼-mile south of the discovery producer, which was completed for 2541 barrels of oil. The company now has eight wells either drilling or being completed in the immediate area.

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flower state's active drilling areas; the Bemis pool of Ellis County listed a quarter-mile east extension at Blackwell Oil & Gas Company et al's Richmond 1, SW SE SE 15-11s-17w. Oil was coming into the hole from the total depth of 3416 feet in the Siliceous lime, top of which was found at 3396 feet. Amount of the oil could not be immediately determined.

Three new producers were recorded for the field and a fourth was on the way. The Texas Company's Bemis 1, NW SE NE 28-11s-17w, received a potential of 2625 barrels of oil from the Siliceous lime between 3400 and 3404 feet. Ryan Consolidated Oil Company's Bemis 5-A, NEc NW 27-11s-17w, was completed for a potential of 2632 barrels of oil in 24 hours. It was producing from the Siliceous lime at 3439 feet and an official potential of 3025 barrels of oil was reported for Deep Rock Oil Corporation's Baumer 16, NW SE NW 27-11s-17w, producing from the Siliceous lime. Its Baumer 12, NW NE NE 27-11s-17w, was ready to drill in. It found the Siliceous lime at 3381 feet and showed some oil. It was halted at 3382 feet while running 7-inch casing.

Another big producer was in the process of completion in the north extension of the Saxman pool of Rice County at Darby Petroleum Company's Oden "A" 1, NEc 6-21s-7w. Top of the conglomerate was found at 3320½ feet and was drilled to 3335 feet where it encountered gusher flow which went over the top of the derrick. Based on a 10-minute flow into pits the well is estimated good for 5000 barrels of oil, making approximately 200 barrels per hour.

It is a west offset to a recent extension well, Carlock and Republic Natural Gas Company's Oden 1, NWc 5-21s-7w, which pushed the field one mile north and was completed for 2552 barrels of oil from the conglomerate.

Acid treatment with 10,000 gallons, a much larger amount than is usual in Kansas wells, was to be attempted at Shields et al's Letsch 2, SE NE SE 27-14s-13w, in the active Letsch pool of south-central Russell County. The test had top of the Kansas City lime at 2805 feet and drilled to 2859 feet where it had 1800 feet of oil in the hole in eight hours. It was to receive the acid treatment late last week.

Two other tests were preparing to go ahead while a third was just starting operations. They were The Texas Company's Letsch 1, NWc SW 26-14s-13w, pulling tubing and rods to drill deeper and Empire Oil & Refining Company's Rogg 1, SEc NE 27-14s-13w, drilling cement. Mid-Continent Petroleum Corporation's Letsch 2, NW SW NW 26-14s-13w, was running cement for rig corners.

Kraft Enlarged

The Kraft pool of Barton County may be extended ½ mile east soon, depending upon developments at Cities Service Oil Company's Hogan 1, CN½ 11-17s-11w. It topped the Siliceous lime at 3342 feet and was starting a core at 3343 feet.

Indian Territory Illuminating Oil Company's Hoffman 1, NEc 1-16s-14w, which extended the Trapp pool of Russell County south and west into Barton County two weeks ago, was completed for a potential of 1875 barrels of oil from the Siliceous lime at 3312 feet. The well, which was making no water, had not yet been acidized.

One mile west of production in the Trapp pool, Russell County, Shell Petroleum Corporation's Batt 1, SEc 35-15s-14w, was building pumping rig after swabbing 231 barrels of oil in 10 hours following acidization with 3000 gallons. During earlier tests the well swabbed 157 barrels of oil in 7½ hours following acid treatment with 2000 gallons.

Stanolind Oil & Gas Company was preparing to drill in at Hartnett 1, NWc SW 23-24s-11w, five miles east of Stafford in Stafford County. A core from 3804 to 3808 feet in the Simpson sand was saturated. It was being standardized.

Continental Oil Company's Meharg 1, NE NW NE 17-15s-13w, extended production ¼ mile east in the Coralena pool of Russell County. It drilled to 3315 feet in the Siliceous lime and had 600 feet of oil in the hole in 12 hours.

Atlantic Refining Company's Pulliam 1, NE NW NE 35-19s-8w, east of Lyons in Rice County, and reported as Kansas' largest gasser since drilling was first started in the state, will have a gasoline extractor installed at the well to separate the casinghead gasoline from the natural gas, coming from the Siliceous lime. Gas Service Company, a subsidiary of Cities Service Oil Company, has leased the well. An $80,000 sour gas plant was recently completed by the former concern which makes the gas marketable by removing the sulphur. An estimated 300 gallons of drip flow is had at the well on a gas flow of 10,000,000 cubic feet per day, as figured by Atlantic officials.

Magnolia Petroleum Company, Tide Water Associated Oil Company and Deep Rock Oil Corporation's Thome 1, NEc 17-26s-4w, west offset to the discovery lease in the Hilger pool of Reno County, made a test of the Viola lime at 4021 feet, the total depth, and established a potential of 1134 barrels of oil.

Stains of oil were found in bottom hole samples at Skelly Oil Company's Adams 1, NWc NE 2-28s-11w, southwest of production in the Cunningham pool of Pratt County. A small show of oil was found in the Lansing lime between 3709 and 3720 feet, the total depth where it swabbed ½-barrel of oil and six barrels of water in one hour. It was drilling ahead, going to the Mississippi or Viola lime formations.

KANSAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BARBER COUNTY—		
Barbara Oil Co., Holmes 1, ce½ se 15-33s-13w (otd 4847)	763	4851
BARTON COUNTY—		
Cities Service, sw nw nw 5-16s-13w	1935	3313
Republic Nat. Gas, Bloomer "B" 1, ne nw nw 14-17s-11w	1128	3338
Lario & Atlantic, Zahorsky "B", ne se ne 23-20s-11w	2110	3270
Magnolia, Roetzel 11, nw sw se 24-20s-11w	1764	3254
I. T. I. O. Schreprl "A" 2, ne se ne 26-20s-11w	1478	3289
COWLEY COUNTY—		
Rex-Morris et al, Lanier 1, ne ne nw 10-30s-5e	*	2917
Texas, Central Life 1, ne ne nw 24-30s-5e	*	2930
ELLIS COUNTY—		
Cities Service, Johansen 1, nw nw ne 22-11s-17w	1800	3484
Magnolia, Johansen 2, nw nw se 22-11s-17w	2401	3412
Deep Rock, Baumer 8, ne nw ne 27-11s-17w	2453	3493
Wentz, Bemis 3, se ne nw 28-11s-17w	2734	3458
J. A. Aylward, Meis 2, se se nw 6-12s-17w	*	3835
Phillips, Staab 3, sw sw nw 11-12s-18w	135	3690
Texas, F. A. Bemis "A", nw sw ne 28-11s-17w	2625	3404
ELLSWORTH COUNTY—		
Continental et al, Walter Steinburg 1, sw sw se 27-17s-8w	*	3272
Janssen 11, nw ne sw 34-17s-8w	740	3236
Continental, Rolfs 5, sw se nw 34-17s-8w	914	3230
Skiles et al, Sturn 3, se se sw 31-17s-9w	*	3255
GRANT COUNTY—		
Panhandle-Eastern, Nese 1, c of sec 30-30s-37w	5.25	2485
GREENWOOD COUNTY—		
Young & Spencer, Sowder 1, ne ne sw 31-25s-13e	*	1993
HAMILTON COUNTY—		
Denver O&R Porter 1, sw sw nw 30-25s-41w	*	6453
HARPER COUNTY—		
Magnolia, Arch Freeman 1, se nw sw 3-31s-6w	*	4860
McPHERSON COUNTY—		
Continental et al, Goering 5, ne nw sw 29-21s-1w	708	3297
W. C. McBride, Inc., Newfeldt 3, se ne nw 28-21s-3w	*	3392
RENO COUNTY—		
National Pet. Co., Tucker 9, cw½ w½ ne 19-24s-4w	1236	3381
Phillips, Astle Island 4, sw ne ne 19-24s-4w (pb 3365)	126	3390
Helmerich & Payne, Haines 1, sw sw sw 9-25s-5w	*	3991
Stanolind-Amerada, Helger "A" 4, nw nw nw 16-26s-4w	655	4031
RICE COUNTY—		
Continental, Kimple 5, 25-18s-8w	800	3193
Skelly, Dittmers 6, ne se sw 28-19s-10w	599	3309
Carter, Risse 3, cn¼ nw sw sw 33-19s-10w	1897	3295
Shell, Hathaway 3, ne sw ne 33-19s-10w	1890	3285
T. M. Deal O&G. Co., Gossman 2, nw sw sw 4-21s-7w	*	3409
Empire, Gossman 1, se se se 5-21s-7w	555	3332
R. E. Day, Manse 1, sw se se 21-21s-7w	*	3838
RUSH COUNTY—		
Flynn et al, Koriel "B" 4, ne ne sw 23-18s-16w	990	3555
Carter, Hergert 1, cn¼ ne se 26-18s-16w	1428	3553
RUSSELL COUNTY—		
J. J. Hall, Miller 13, sw sw ne 31-14s-13w	1052	2934
Phillips, Corrall 2, sw se se 18-14s-14w	2494	3047
Central Pet. Co., ne sw ne 3-14s-15w	2362	3306
Transwestern, K. Polcyn 4, nw ne nw 14-14s-15w	1248	3250
W. O. Southern, Sellens Heirs "B" 7, ne sw nw 30-15s-13w	935	3305
W. I. Southern, Sellens Heirs "B" 8, ne sw nw 30-15s-13w	2374	3313
Gulf, Hoffman 9, sw nw sw 31-15s-13w	1936	3261
Skelly, Neidens 6, sw sw se 32-15s-13w	2721	3300
Empire, Boomhauer 8, ne nw ne 25-15s-14w	377	3326
Gulf, Mollie 5, nw ne se 25-15s-14w	1732	3325
STAFFORD COUNTY—		
Stanolind, Komarek 7, ne ne se 30-22s-11w	1349	3582
Skelly et al, Grunder 1, nw nw nw 22-25s-14w	*	3960
STEVENS COUNTY—		
Kuhn et al, Youngren 1, sw sw ne 1-32s-39w	¶8.25	2600
Benedum & Trees, Beavers 1, cne¼ 11-35s-38w	¶3	2800
SUMNER COUNTY—		
Douglas et al, Strickler 1, sw nw ne 30-32s-1w	*	4457
Stelbar, Barlow "A" 3, sw se se 33-31s-1w	15	3705
WOODSON COUNTY—		
Braden & Aikman, Arnold 1, nw sw ne 35-23s-14e	15	1623
Morris et al, Koening 1, se se nw 35-24s-15e	*	1458

Company, Well and Location	Bbls.	Depth

A NEW SCIENCE OF RUBBER MAKING

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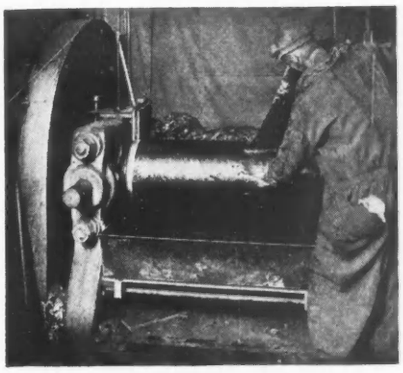

Milling is done on heavy rolls and chemicals uniformly distributed throughout.

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Adding chemicals during mixing, after which sheets are milled.

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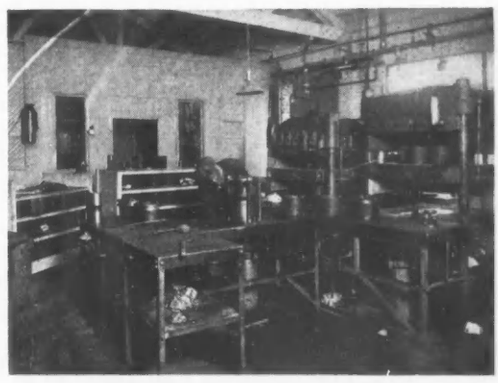
Interesting manufacturing data will be supplied upon request by addressing:



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NORTH AND WEST TEXAS

Wasson developing as largest producing area.

* * *

Outpost two miles southwest of Goldsmith shows.

* * *

Another Sand Hills Ordovician setback.

Midland, Texas.—Largest oil producing area in West Texas, where major fields are commonplace, is taking shape on the Wasson anticline, located on the Gaines-Yoakum County line. Gaines County portion of the field has been proved in a general east to west direction for a width of about seven miles, while the northwest trend into Yoakum County affords a length of 10 miles. Two wildcats four and six miles, respectively, to the north of the Wasson field outposts in Yoakum County are showing for oil producers at slightly greater depths, and may later prove to be on the same geological feature.

Continuous drilling program that may be prolonged for five years is in store for the Wasson area. Majors predominate as lease owners. Independents have sufficient lease protection within the area now outlined for production to stimulate development where ordinarily the large companies would prefer to restrict drilling to a minimum while actively engaged in competitive drilling in other Permian basin areas.

Four completions and seven tests in process of completion have not provided sufficient information to venture a forecast on the ultimate oil recovery per acre. Performance of these wells indicate that initial yields will register a wide variation due to change in the porosity of the Permian section. Opinion prevails that the recoverable oil will not equal the average acre yield afforded by the general run of fields in the older producing section of the basin. However, this forecast is subject to revision, as intermediate acreage between wells can alter the situation.

May Link With Seminole

Eventual linking of the Wasson field with the Seminole two-well pool, Gaines County, is not a remote possibility, according to lease buying activities of majors and independents. The two areas are on the same strike, as determined by geophysical surveys, and are 14½ miles apart. Most popular theory is that one or more fields will be found along this interval, which has not been explored. Surface geology is not practical in the region. Favorable geophysical data on the Seminole structure, which yields an abundance of gas in the lime section and in the semi-shallow Yates sand, led to the payment of large bonuses for leases and royalty interests in advance of explorations.

Drilling of the Wasson discovery was likewise predicated on geophysical information. Confronted with lease expirations on a 12-section block inherited from Marland Oil Company, Continental Oil Company obtained a favorable geophysical report when shooting was undertaken early last spring. One-half interest in the west six sections was assigned to Amon G. Carter for the drilling of a test, and the latter was given an option on the remainder of the block on the same basis. A. L. Wasson 1, SW SW NW PSL Section 48, Block AX, proved the structure for flowing production June 19 with a natural yield of 332 barrels of 34.4 gravity oil and 6,640,000 feet of gas daily through casing and tubing. Production is from lime at 4920-4959 feet, with an elevation of 3549 feet.

Previous to this discovery Carter exercised option held on the other block, and drilled Langdon 1, near SE SE SW PSL Section 44, Block AX, about 2¾ miles northeast of the producer. This second completion proved lower structurally and was void of natural flow because of the absence of gas. Triple acid treatment of lime at 4930-4995 feet developed a potential flow of 424 barrels of oil and 649,000 feet of gas. It has an elevation of 3547 feet. Both wells are on 640-acre leases, held on a 50-50 basis, and Continental Oil Company has taken over operations.

Cost Above Average

Cost of completing wells in the Wasson area is above the average for lime fields in the Permian basin. Experience reveals that the average cost will range from $38,000 to $40,000. Formations favor the use of heavy rotary rigs, which can negotiate the medium hard sand, anhydrite and lime sections in 50 days elapsed time. An abundance of fresh water at shallow depths solves the boiler water problem. All drilling has been performed by experienced contractors. The prevailing contract price is $4.50 per foot, with the lease owner furnishing fuel, water and derrick. Greatest wear on rock bits occurs in the Yates sand section, topped near the 3000-foot level. Majority operators are setting short surface pipe and 7-inch oil string near the 4800-foot level.

Productive limits of the Wasson field were broadened more than a mile to the southeast of the discovery mid-August when Amon G. Carter et al's J. R. Sharp 2, SWc Section 47, gauged 1172 barrels of oil and 1,230,000 feet of gas after triple acid treatment of lime at 4937-5000 feet. It has an elevation of 3535 feet. This well failed to flow prior to use of acid. Intermediate acreage between the discovery and the northeast outpost recorded the largest producer when Continental Oil Company's W. M. Moore 1, SWc Section 46, flowed 20 barrels hourly natural from lime at 4840-4995 feet, with an elevation of 3549 feet. Formation was acidized with 3000 gallons followed by 4000 gallons on August 13, and attained a maximum flow of 195½ barrels oil per hour. Later official proration gauge credited the well with flowing 1338 barrels of oil and 9,400,000 feet of gas daily through open casing and tubing.

Allowable production of these four completed wells during September is restricted to 480 barrels daily, according to Railroad Commission's order. Portion of the oil and gas yield is being utilized for fuel on nearby tests, while the remainder is trucked to the Means field, Andrews County, where deliveries are made to Humble Pipe Line Company.

Direct pipe line connection for this area and the Bennett field, Yoakum County, where five wells have been completed near the 5280-foot level, or about 1710 feet sub sea, will materialize

TEXAS PANHANDLE

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CARSON COUNTY—		
Gulf, E. Cooper 20	454	3034
Magnolia, Fee 29, Lse. 244	445	3087
GRAY COUNTY—		
Amagray Oil Co., Chapman 2-B	189	2872
Cities Service, I. B. Hughey 5-B	628	3285
M. L. Jackson 5	301	3319
Kewanee O. & G. Co., B. E. McKinney 4	633	3293
Magnolia, E. Haggard 7	230	3298
Sinclair Prairie, D. W. Carey 3	248	3305
HUTCHINSON COUNTY—		
J. E. Crosbie, Inc., H. W. Pitts 19	854	3054
Gulf, H. C. Pitcher 12	253	3194
T. G. Nichols et al, J. W. Moore 3	419	3212
Phillips, Cockrell 21	503	3051
Jordan 5	102	3045
Seaboard Oil Corp., J. A. Whittenburg 1	313	2760
Skelly Oil Co.-Cabot Carbon Co., I. C. Merchant 1	1575	2798
Harry Stekoll et al, J. A. Whittenburg 3-C	20	3050
Timms-Robinson Oil Corp., J. W. Moore 6	528	3130
Turman Oil Co. & Plains Pet. Co., Whittenburg 13-A	800	2935
MOORE COUNTY—		
Continental, J. E. Wells 1	¶80	3065
Shamrock O. & G. Corp., J. T. Sneed 6, sec 48	¶81.1	2920
WHEELER COUNTY—		
El Bar Corp., J. M. Noel 12	85	2454
H. C. Robinson et al, S. T. Morgan 1	*	4014

*Failures; †Junked; ¶Million cu. ft. gas.

shortly. Humble Pipe Line Company plans to construct 22 miles of 8-inch trunk line northeast from its Hobbs field, N. M., terminal, and lay gathering lines in both fields.

Trend of production to the west of the original Wasson strike has been partially proved for 4¼ miles by two tests drilled by Amerada Petroleum Corporation. Both encountered water immediately above and below the oil saturated lime zone, and have not been successful in excluding the upper strata of water. Amerada Petroleum Corporation's Flo Matthews 1, NEc Section 417, Block G, about 1¼ miles southwest of the discovery, plugged back from formation water at 5018 feet, or 1461 feet sub sea, to 5008 feet. Prior to plugging back the well swabbed a high percentage of water after using acid twice. Owners are experimenting with tubing packer to exclude upper water, and on last report swabbed 99 barrels fluid in 16 hours, 40 percent water and 3 percent b.s. This concern's Armstrong 1, C NW NW Section 456, Block G, about three miles to the west, plugged back from water at 5079 feet, or 1467 feet below sea level, to 5060 feet. Tubing packer was inserted at 5024 feet, and the pay below 5026 feet was treated with 2000 gallons of acid. The well swabbed mostly water, and packer will be reset. Amerada Petroleum Corporation's R. A. Cox 1, NWc Section 380, about 2970 feet south of the discovery, filled 3500 feet with oil from pay at 4897-4921 feet. It has been deepened to 4952 feet, or 1498 feet sub sea, and is awaiting production test.

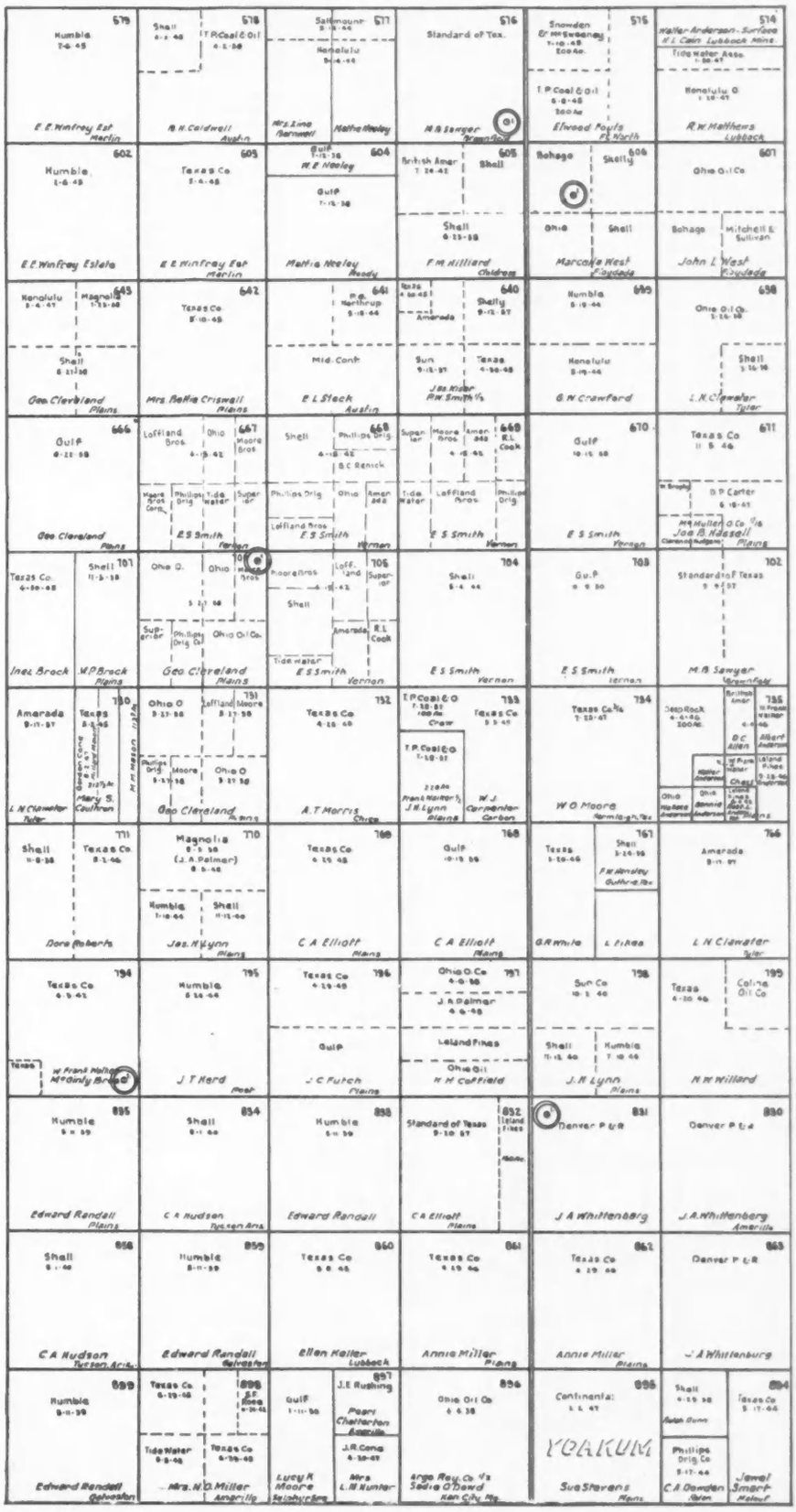
Tight lime condition has been experienced by Phillips Petroleum Company and I.T.I.O. Company's Brand 1, SE SE NE Section 55, about 1⅝ miles north of the discovery, with the hole bottomed at 5011 feet, or 1426 feet sub sea. This outpost swabbed 2½ barrels hourly after using an aggregate of 10,000 gallons of acid solution in treating the lime three times. It is awaiting result of a 10,000-gallon injection.

Expansion of the Wasson area into southern Yoakum County materialized recently when Denver Producing & Refining Company's Whittenburg 1, C NW NW Section 831, Block D, about 6¼ miles northwest of the Wasson discovery, logged broken lime at 4960-5015 feet. The hole is bottomed at minus 1399 feet. This well flowed by heads prior to using 1,000, 3,000 and 10,000 gallons of acid in separate treatments, and was flowing 16 barrels of oil hourly through tubing, according to late report.

Sweep of the field to the northwest was resumed last week when The Texas Company's W. F. Walker 1, C SE SE Section 794, Block D, about 3½ miles west by north of Whittenburg 1, tested ¾-bailer oil per hour natural from broken lime at 4916-5107 feet. The last four feet of formation showed a high percentage of lime with favorable porosity. It is bottomed at 1451 feet sub sea, and will be acidized.

Moore Bros. Corporation's George Cleveland-Ohio 1, NEc Section 706, about 4½ miles north of a line between Whittenburg 1 and Walker 1, fulfilled contract depth in drilling to5506 feet, or 1882 feet sub sea. Seven-inch pipe has been cemented at 4618 feet to test broken lime, showing saturation between 5215 feet and 5329 feet.

Bohago Oil Corporation and Bond



Sufficient acreage to support a major drilling program for several years has been partially proved by four wildcats in process of completion in southwestern Yoakum County in lime section, varying from 1399 to 1705 feet below sea level. The two southernmost projects shown on the above map are definitely related to the Wasson field, northern Gaines County.

—Map Courtesy Southwest Mapping Company, Fort Worth.

Oil Corporation's M. West 1, C SE NW Section 606, Block D, located 6¾ miles north of the flowing producer on the Whittenburg land and eight miles west by north of the Bennett field, Yoakum County, has been in process of completion for several weeks at 5255 feet, or 1640 feet sub sea. Opinion prevails that it is on the north extension of the Wasson anticline. Cleanout operations were underway late last week with 3500 feet of oil in hole. Three acid treatments, aggregating 10,000 gallons, have been used, resulting in a temporary production boost. The well swabbed and flowed 79 barrels in 24 hours after the last acid treatment.

Second Avoca well produces from sandy and Canyon lime

Abilene, Texas.—Completion of the second prolific oil producer in Avoca field, northeastern Jones County, revealed that a sharp dip in the structure was encountered by this east offset to the discovery. Maracaibo Oil Exploration Corporation and W. L. Pickens' Carl Olander 1, NWc N½ SE Section 196, BBB&C Ry. Survey, responded to treatment with 4000 gallons of acid with a flow of 128 barrels oil the first hour on ¾-inch choke. The well filled two 500-barrel tanks in 7-2/3 hours, then was shut in for storage.

Production is from sandy-lime at 3260-65 feet and Canyon lime at 3276-84 feet, with 11 feet of shale separating the two zones. The elevation is 1563 feet. Prior to using acid the well filled 300 feet with oil. Correlation of the main pay at 3276 feet with the discovery places the new producer about 32 feet lower on structure. A twin location about 75 feet southeast has been started by the partnership to try for production in the Fry sand passed up at 1438-51 feet.

Offset Drilling Plugs

Iron Mountain Oil Company and Humble Oil & Refining Company's H. B. Haterius 1, SWc NE Section 196, and a north offset to the new producer, was drilling plugs late last week after cementing pipe above saturated lime at 3240-41 feet. The well flowed wild when the prolific section was tapped unexpectedly. It had to be mudded off. It has an elevation of 1557 feet. The original producer drilled by the above partnership and the new producer on the Olander tract are dependent upon tank truck sales to refineries in the district for an oil outlet, and receive $1.05 per barrel at the well.

Will Gun-Perforate

A saturated lime section passed up by General Crude Oil Company's W. H. Bryan 1, southern Stonewall County wildcat, in drilling to 4452 feet, where it showed salt water, will be tested. The hole will be plugged back to the 3600-foot level and pipe gun-perforated opposite oil and gas showings in cores taken at 3535-52 feet, with an elevation of 1679 feet. The latter zone is identified as the lower section of the Cisco and is below the oil horizon in the Royston field, located to the south in Fisher County. General Crude Oil Company is starting a second wildcat on the B. F. Harrison tract, NWc of D. Harcrow Survey, about 1½ miles north of Bryan 1, which is in the Wm. Vardeman Survey 347.

Exploration of the Marble Falls sandy-lime zone in northeastern Stephens County gained encouragement when the semi-wildcat test of O. J. Perren et al on the J. K. P. Hughes-Vina Iles tract, S½ Section 6, AB&M Survey, filled 1200 feet with oil in 12 hours from lime at 3940-4011 feet.

To Plug Rotan Outpost

Plugging orders have been issued for Jas. L. Anderson et al's E. Colwell 1, wildcat on the northwest edge of Rotan, Fisher County, with the hole bottomed at 3708 feet. It is about 3¼ miles west by south of the prolific Robinson area, where an important drilling program is getting under way. Low structural position of Colwell 1 lessens the possibility of townlot drilling at Rotan, although a number of permits have been approved.

Tide Water Associated Oil Company's Waddell 1, about ½ mile east of its Smith 1, second producer for the Robinson or Rotan area, encountered the Noodle Creek lime 13 feet higher structurally. Seven-inch pipe was cemented at 3480 feet. It is due to drill in over the week-end. Lewis Production Company's Morrow 2, east offset to the south outpost, checked 3 feet higher on the lime marker, and cemented 7-inch pipe at 3510 feet. Magnolia Petroleum Company's Smith 1, northeast offset to production, landed pipe at 3472 feet.

Harper extended two miles west and northwest

Midland.—Expansion of the Harper field to the northwest and west, and promise of a two-mile southwest extension for the Goldsmith field, automatically paves the way for more drilling in Ector County, which has been the most active county in West Texas since early summer.

Productive limits of the Harper area were extended about two miles to the northwest when Amon G. Carter and John W. Naylor's Parker 1, SW SW SE T&P Ry., Section 15, Block 44, T-2-S, responded to triple acid treament of lime at 4080-4270 feet with an initial flow of 608 barrels of oil and 1,250,000 feet of gas. First saturation was logged at 996 feet below sea level.

L. H. Wentz et al's Paul Moss 1, near C NE Section 28, about 1½ miles southwest of the above outpost and more than two miles west of the original field, developed hole full of oil from 13 feet of saturation topped at 4002 feet, or 914 feet sub sea. It occupies the highest structural position in the field, having logged top of Yates at 2680 feet and first lime at 3630 feet, and is expected to respond to acid favorably.

Recovery of oil saturated core at 3909-11 feet by Furhman Petroleum Corporation, Colton-Lester and Mitchell, Inc.'s Cowden 1, NEc Section 41, Block 43, about 1¾ miles southeast of production in the Harper field, points to another important extension. Salt section was logged at 1742-2660 feet, and top of Yates at 2715 feet, with an elevation of 3024 feet. Cable tools have been moved in to drill below oil string cemented at 3920 feet.

Goldsmith Extension

Shasta Oil Company's Sands 1, NEc S½ T&P Ry. Section 32, Block 44, T-1-S, about 2 miles west by south of nearest production in the Goldsmith field, bailed 3 barrels oil and 9 barrels water daily from broken lime at 4291-4300 feet. An attempt is being made to exhaust the water before using acid. It is conceded a 50-50 chance of making a small producer, although it is low on structure. Top of Yates sand was logged at 2810 feet, with an elevation of 3184 feet. Gulf Oil Corporation holds lease on all acreage between this outpost and nearest production through having the entire Goldsmith 19,840-acre ranch, which accounted for six flowing completions the past week, with initial yields ranging from 572 to 3740 barrels.

Sand Hills Setback

Another setback was given the Ordovician lime development in the Sand Hills

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NATIONAL TUBE COMPANY

PITTSBURGH, PA.

United States Steel Products Company, New York, *Export Distributors*

UNITED STATES STEEL

field, Crane County, when Sinclair Prairie Oil Company et al's J. B. Tubb 2, NW NW SW PSL, Section 3, Block B-27, about ½ mile east of the largest deep producer, tested water in Ellenberger lime at 6186-6212 feet, with an elevation of 2552 feet. Ellenberger was encountered about 223 feet lower structurally than the producer. Tubbs 2 logged 344 feet of Simpson, or middle Ordovician as compared to a 150-foot section in the big producer.

Loffland Bros. Company's Tubb-Gulf 3, about 1½ miles east of production in the deep zone, remains idle after developing a flow of 100 barrels of water daily in Ellenberger at 5802-91 feet, with an elevation of 2540 feet. These two failures will retard deep explorations in the section of the field that produces from the Permian. The four Ordovician producers are northwest and west of the shallower wells.

Two outpost tests for single-well pools in the north portion of the Permian Basin were awaiting acid treatment late last week after swabbing tests. Stanolind Oil and Gas Company's Alex Slaughter 1, about two miles east by south of the Slaughter pool, Hockley County, averaged 2½ barrels oil hourly from brown sandy-lime at 4940-75 feet, with an elevation of 3518 feet. Ernest L. Wilson et al's Scanlan 1, about 4½ miles west of a pumper swabbed 2½ barrels hourly from oil zone at 4924-34 feet, with the hole bottomed at 4965 feet, or 1854 feet sub sea, and yields about 5 barrels water daily. Water is believed to be coming from lime at 4850 feet. Tubing packer will be installed to exclude this zone before using acid.

Skelly and Cabot's wildcat in Hutchinson County flows

Pampa, Texas.—Skelly Oil Company and Cabot Carbon Company's Ira C. Merchant 1, SWc H&TC Ry. Section 34, Block 47, Hutchinson County semi-wildcat, uncovered flush production in lime on the north bank of the Canadian River and one mile from nearest oil wells. This well gauged 1575 barrels and 3,000,000 feet of gas natural from lime at 2770-73 feet and 2785-86 feet, with the hole bottomed 118 feet above sea level. It was deepened to 2798 feet, and the hourly oil flow stepped up to 70 barrels. Wentz Oil Company's Merchant 1, located about ½ mile northeast, filled 1500 feet with oil from pay topped at 2777 feet, with an elevation of 2828 feet, but encountered water in deepening to 2800 feet. It was plugged back in March, 1927, and completed as a gasser.

Drilling Two Deep Ones

Two Panhandle wildcats slated to fulfill 6000-foot contracts were making progress last week. J. R. Macon, Denver, et al's W. R. Morris 1, SW SE H&TC Ry. Section 212, Block 43, Ochiltree County, was drilling at 4190 feet, with an elevation of 2931 feet. This wildcat is on a 100,000-acre block assembled in 1933. In Deaf Smith County, Uscan Oil Company and Jeffers Oil Company's F. C. Farwell 1, C NW Section 18, Township 3n-2e, was drilling at 5175 feet, with an elevation of 4226 feet. This project is supported by a 25,000-acre drilling block.

WEST CENTRAL TEXAS Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BROWN COUNTY—		
E. H. Hamilton et al, Seawalt 1..	30	1003
Kewanee O&G Co., Hickman 30...	10	1310
Hickman 31	5	1317
J. L. McCurry et al, Eddington 2..	12	1312
R. M. Ragsdale et al, J. H. Tabor 1	488	2461
CALLAHAN COUNTY—		
Ray Arrowwood et al, Cutbirth 1..	*	634
T. J. Jeffries et al, Walker 1.....	*	861
Mesa Verde Oil Co., E. T. Klepper 2	39	1655
Pueblo Pet. Co., Jackson 4.....	*	1180
Smart & Lewis, J. B. Smart 1....	*	813
Ungren & Frazier, Ross 1.....	*	1360
COLEMAN COUNTY—		
Brannon & Murry, Younglove 5..	100	1930
Joe Utay et al, Edmondson 1.....	*	1690
EASTLAND COUNTY—		
Barnett Pet. Corp., Downtain 2...	28	1502
Hickok Prod. & Dev. Co., Cleveland 2	¶8	3835
Hoffman & Page Co., Justice 1....	*	1450
McCULLOCH COUNTY—		
John W. Westbrook et al, Johnson 1	*	1503
SHACKELFORD COUNTY—		
Ben Banner et al, Nail 1, sec 135..	*	1665
Charter Oil Co., Mimms 10.....	110	1608
J. L. Flowers, Tr., Rogers 4.....	*	435
Rogers 5	6	321
R. F. Gilman et al, Jeter 20.....	6	892
M. L. Hays et al, Leschber 2	¶3.6	750
Humble & Pitzer & West, DeLafosse 4	*	4434
Hunter & Rowe, Davis 2.....	10	1617
Martin & Son-Roberts & Hodges, Davis 5	35	1725
Roeser & Pendleton, Inc., E. S. Dawson 39	95	1639
T. K. Simmons et al, Davis 1	*	2021
Tannehill et al, Matthews 35.....	*	1250
Terry & Spencer, Isbell 1	3	729
STEPHENS COUNTY—		
Philtop O&G Co., Corbett 1.....	15	4008

*Failures; †Junked; ¶Million cu. ft. gas.

NORTH TEXAS

Company, Well and Location	Init. Prod. Bbls.	Depth
ARCHER COUNTY—		
L. T. Burns et al, M. S. Fichte 1, blk 34	35	1461
Deep Oil Dev. Co., L. F. Wilson-McCrory 22, sec 76.....	90	2210
L. F. Wilson-McCrory 23, sec 76..	*	2232
Humble, Wolfe 7, sec 1.....	15	1342
Shappell Oil Co., John Conner 3....	101	1108
CLAY COUNTY—		
Sussex Oil Co., C. J. Shumake 4, lot 4	94	1146
The Texas Co., L. R. Goetze 4, lot 2	37	1101
COOKE COUNTY—		
F. W. Merrick, Inc., G. A. Stelzer 5-C	7	860
DENTON COUNTY—		
Manning & Moore, D. Ratchford 1..	*	2102
JACK COUNTY—		
Bennet Pet. Corp., J. S. W. Owens 1	242	3225
Burk Royalty Co., J. M. Box 1.....	*	3240
Cockburn Oil Co., R. R. Clayton 3..	474	3097
R. H. Dearing & Son, J. A. Raley 2B	350	3190
Hamilton Pet. Co., M. A. Sampley 2.	*	5257
Hill & Hill, Inc., T. J. Jones 1....	134	3095
Moncrief & Showers, Inc., J. M. Box 1	204	3132
States Oil Corp., Clayton Bros. 4-C.	34	3040
WICHITA COUNTY—		
Apple & Brandeberry, G. Jennings 1-A, sec 12	3	1830
L. T. Burns et al, 1st Nat'l Bank 15, blk 27	424	3863
Jennings Drl. Co., Jennings Est. 3, sec 8	*	1417
WILBARGER COUNTY—		
Cullum & Alexander, Waggoner Est 1, sec 44	*	3070
Fain-McGaha Oil Corp., Waggoner Est. 23-L, sec 31	*	3932
Gibson & Jennings, Inc., D. G. Feller 1, sec 109	48	2104
H. B. F. Oil Co., Waggoner Est 1, sec 44	*	3115
YOUNG COUNTY—		
Hawkins & Glover, F. M. Rushing 7, sec 212	5	840
Pitzer & West, T. J. Gardner 3, sec 614	1892	3996
Underwood Drl. Co., Campbell 30-C, sec 1376	*	960

*Failures; †Junked; ¶Million cu. ft. gas.

WEST TEXAS Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ANDREWS COUNTY (Means)—		
Humble, R. M. Means 10	642	4535
CRANE COUNTY (Waddell)—		
Gulf, M. F. Henderson 9.....1208		3544
CRANE COUNTY (McCamey)—		
Hix Oil Co., E. S. Hughes 4.....	913	2085
ECTOR COUNTY (Foster)—		
Barnsdall, Foster 3	476	4183
M. B. K. Drlg. Co. (was Black et al), Foster 1	703	4194
ECTOR COUNTY (Goldsmith)—		
Atlantic Ref., H. E. Cummins 3-D	55	4260
H. E. Cummins 4-D	143	4274
W. H. Dunning Est., C. Scharbauer 5-A 2032		4232
Gulf, Goldsmith 31	572	4215
Goldsmith 33 2012		4235
Goldsmith 34 1296		4213
Goldsmith 35 2028		4220
Goldsmith 36 3740		4235
Goldsmith 37 2672		4217
J. E. Mabee & Blackstock, Cummins 4	791	4260
Phillips-Pure, C. Cowden 13.....5033		4162
T. P. Coal & Oil Co., C. Scharbauer 6 2480		4234
ECTOR COUNTY (Judkins)—		
Cities Service, University 1.....	*	3770
ECTOR COUNTY (North Cowden)—		
Amerada & Phillips, Holt 3.....	509	4295
Devonian Oil Co., B. H. Blakeney 2	520	4218
Landreth Prod. Corp.-Llano Oil Co., Holt 4	550	4310
Stanolind, J. M. Cowden 51 1362		4291
FISHER COUNTY (Wildcat)—		
Jas. L. Anderson, Cooper & Gilbreath, E. Colwell 1	*	3708
HOWARD COUNTY—		
American-Maracaibo Co., W. R. Settles 3-B	280	2524
Moore Bros. Corp., I. B. Cauble 1..	*	3303
Sinclair Prairie, Texas L. & M. Co. 5	498	2820
JONES COUNTY—		
Brown Eagle Oil Co.-S. B. Roberts Co., Lewis 3	566	2001
Danciger Oil & Refineries, Inc., Guitar 7	703	2006
W. B. Hamilton et al, Bertie Zant 1	*	2300
Chas. J. Kleiner et al, Guitar 1 ...	*	2251
Petroleum Producers Co., H. C. Harvey 4	61	1663
L. B. Tannehill et al, P. F. Willis 1	*	2446
Ungren & Frazier, H. Dorsey 2-B..	137	2173
LOVING COUNTY (Mason) —		
Woodley Pet. Co., T. P. Land Trust 1	†	3461
PECOS COUNTY (Masterson)—		
Arthur Adams et al, J. Masterson 6	130	1493
PECOS COUNTY (Netterville)—		
E. P. Craven et al, Netterville 1...	185	2332
C. W. Fowler et al, J. W. Potts 1	294	2331
Superior Oil Corp. (was Tex-Mex. Pet. Corp.), Netterville 5	200	2316
PECOS COUNTY (Yates)—		
Ohio Oil Co., I. G. Yates 5-F.....17,448		1404
I. G. Yates 17-H 59,232		1760
PECOS COUNTY (Wildcat)—		
Magnolia & Superior Oil Corp., McKee 1-A	†	1210
Phillips, Pryor-C. H. Grierson 1..	*	3007
PECOS COUNTY (Pecos Valley)—		
Adamount Oil Co.-Montague, H. J. Eaton-Shell 1	10	1672
PECOS COUNTY (Toborg)—		
Cardinal Oil Co., M. A. Smith 14-A	57	355
Paul Childress, Tr., Smith-Sinco 19	*	398
UPTON COUNTY (McCamey)—		
Brown-Hancock-Hines Oil Corp., Baker-Tide Water 2-C.....	932	2341
Baker-Tide Water 3-C	966	2334
Cardinal Oil Co., Starnes-Fowler 4	304	2423
Continental, Reese 13	536	2610
Sergent-Rutter & Wilbanks, D. Elder 2	904	2202
WARD COUNTY—		
Gulf, Hutchings 83 1233		2750
Hutchings 84 1203		2740
Hanna & Case, E. L. White 2.....	30	2614
Murjo Oil Corp., D. Monroe 1....	*	5050
Standard Oil Co. (Tex.), McFarland 16, sec 37	347	2670
Superior Oil Corp. (was Tex-Mex Pet.), Smith-Pure 10	300	2465
Tide Water Associated, Johnson 38	950	3016
WINKLER COUNTY (Henderson)—		
Skelly Oil Co., Daugherty 1-B. ¶14 & 36		3041
WINKLER COUNTY (Kermit)—		
Herbert Oil Co., Ida Hendrick 4..	611	3155
Magnolia, Walton 95	311	3250
Walton 97	909	2932
WINKLER COUNTY (Keystone)—		
The Falcon Co., McCutcheon-Humble 7	216	3372
J. R. Sharp et al, McCutcheon 3...	168	3438

*Failures; †Junked; ¶Million cu. ft. gas.

Trinity sand tests holding greatest interest.

* * *

Big field flank test has Trinity as objective.

Tyler.—Humble Oil & Refining Company Hassell 1, projected Trinity test for the Jarvis area, Anderson County, registered a low structural position in drilling to the Woodbine horizon and location will be made for another test on the block. Top of Woodbine series was logged at 4577 feet, or 4216 feet below sea level, and sand at 4593-4598 feet showed mud, salt water and a rainbow of oil on drill stem test. This failure is in the northwest corner of 80-acre lease, James Beard survey about 2 miles north of Jarvis.

Barnsdall Oil Company Swanson 1, Richard Duty survey, about ¾-mile northeast of Jarvis, drilled to Georgetown lime at 5215-45 feet last June and shut down after cementing 9-inch pipe on bottom, logged top of Woodbine series at 4406 feet, or 4076 feet below sea level, and tested water at 4642-65 feet.

Trinity projects continue to hold the most interest among the East Texas basin wildcats. American Liberty Oil Company, et al's Larue-Johnson 1, located on the Larue salt dome, Henderson County, found a thin Austin chalk section in logging this section at 3811-4139 feet, with an elevation of 464 feet, and was coring at 4360 feet. It is contracted to drill to the Trinity.

Tide Water Associated Oil Company et al's McElreath-Suggett 2-C, second Trinity test for the Opelika structure, was coring in Travis Peak series at 8610 feet. Operations were under way on two Limestone County deep tests late last week.

Pure Oil Company's Kendrick 16, Mexia field, was coring sand and shale section of Travis Peak at 6705 feet.

Stanolind Oil and Gas Company and Ramsey Petroleum Corporation's Norris 1, located on the Thornton fault and 5 miles north of Kosse, was drilling at 1930 feet with the Trinity as its goal.

Humble Oil & Refining Company and Gulf Oil Corporation's Robertson 1, first Trinity project for the east flank of the East Texas field, logged base of Pecan chalk at 2737 feet, with an elevation of 272 feet and was drilling at 2820 feet. It is about 4 miles east of production in Gregg County.

C and G Oil Company's Newsom 1, southern Anderson County wildcat situated 4¼ miles northwest of the discovery producer of the Percilla area, Houston County, abandoned after showing salt water and oil cut mud in Woodbine at 5993-6004 feet, with an elevation of 486 feet. Thick section of Eagleford shale showed up after registering a high structural position on the Pecan and Austin chalk markers.

EAST TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
JOINER AREA—		
Arkansas Fuel Oil, J. W. Wheelis 17 (80.72-ac)	4000	3680
Atlantic Ref., C. Young 8-D (40-ac)	7000	3770
Blackwell O. & G. Co., S. Stone 11-A (53.04-ac)	7600	3697
Davis & Hart, W. B. Perry 3-C (80-ac)	70	3645
G. B. R. Oil Corp., L. Harmon 15 (26.87-ac)	6000	3778
A. S. Genecov & Roosth, R. McDavid 6 (21.9-ac)	4000	3757
R. McDavid 7 (21.9-ac)	3200	3742
Gulf, H. Johnson 9 (101½-ac)	3000	3788
Humble, Kangerga 64-A (333¼-ac)	5600	3730
Kangerga 65-A (333¼-ac)	5000	3666
Hunt Oil Co., R. W. Fair 29-A (136.72-ac)	7300	3652
R. W. Fair 32-C (211.4-ac)	10,000	3619
Hunt & G. H. Vaughn, C. Young 20 (125.95-ac)	9700	3668
McCullough Oil Co., M. L. Thompson 2 (1-ac)	4000	3778
Octo Oil Corp., F. J. Cox 4-A (9.48-ac)	1200	3693
Ohio Oil Co., M. M. Cross 83 (1097.88-ac)	2400	3626
Olsan Bros., J. T. Brown 5 (16-ac)	2750	3745
Overton Ref. Co. (was Rogers et al), J. Lee 3 (24½-ac)	115	3652
Retsal Drl. Co., J. T. Brown 6 (16.4-ac)	5400	3723
Sun, H. A. Pace 36-B (637.45-ac)	500	3719
Texas Canadian Oil Corp., F. A. Keel 8 (63-ac)	1500	3697
Tide Water Associated, J. R. Iron 13 (73.55-ac)	7200	3665
Ward Oil Corp., J. M. Finney 15 (74.51-ac)	4000	3729
KILGORE AREA—		
Arcadia Ref. Co., E. Sample 9 (101.66-ac)	1500	3772
Canadian Oil Prod. Co., S. Hilburn 7 (40-ac)	7600	3680
Cities Service, E. L. Walker 20 (152.21-ac)	7000	3688
R. H. Dearing & Son, E. M. Wallace 2, blk 122	3000	3597
Everts Drl. Co., H. F. Crews 4-B (50-ac)	1500	3830
R. W. Fair & Thompson, D. Carr 8-A (36-ac)	7200	3492
Hamill & Smith (was O. D. Adams), J. A. Knowles 1-A (11/100-ac)	600	3538
Houston Oil, Nat Bean 7-B (40.95-ac)	4200	3628
Humble, L. D. Crim 179 (914.51-ac)	8400	3597
S. S. Laird 41-A (230-ac)	5600	3690
S. S. Laird et al, A. Muckelroy 3 (1.45-ac)	750	3585
Magnolia, W. B. Goyne 4 (30.53-ac)	7200	3610
Producers Inv. Corp., J. A. Butts 7 (11.41-ac)	1500	3580
J. R. Sharp et al, Morton-Dickson 1-B (1.72-ac)	600	3532
L. L. Sugar et al, L. P. Griffin 3 (2.85-ac)	5000	3550
Sun, G. Reese 20 (124.22-ac)	1200	3709
Harry H. Terte et al, I. Benson 4 (8-ac)	4500	3605
Tide Water Associated, J. M. Blackman 18 (80.86-ac)	4200	3640
C. G. Strong 19 (113.1-ac)	4200	3637
LONGVIEW AREA—		
Atlantic Ref., Jas Wilson 17 (100-ac)	9800	3750
Atlantic-Sun, R. C. Barnswell 11-B (50-ac)	9800	3510
M. Hays 82 (448-ac)	10,300	3625
Ed. Cox & Jake Hamon, fee 11 (54.51-ac)	7000	3511
L. S. Flannery, Inc., W. H. York 4 (41-ac)	6000	3515
Herbert Fry et al, O. Willhite 1 (1½-ac)	9200	3621
Gen'l Crude Oil, R. C. Barnswell 15 (50-ac)	10,500	3479
Gen'l American Oil Co., A. J. Sanders 22-A (73.63-ac)	5300	3598
C. G. Glasscock et al, J. B. Webb 6 (10-ac)	8700	3696
Hester & Graham, F. P. Branson 6 (21.11-ac)	50	3594
Humble, T. B. Harris 28 (175.18-ac)	3600	3527
T. B. Harris 29 (175.18-ac)	3600	3555
A. J. Watkins 11 (81.3-ac)	6500	3723
L. G. S. Oil Corp., D. W. McQueen 2-C (94.54-ac)	4000	3564
Joe Long Drl. Co.-Cushing Drl. Co., Owens 24-A (208-ac)	2500	3650
Petroleum Corp. of Ven., J. M. Tuttle 6 (25-ac)	8800	3535
P. H. Pewitt et al, T. J. Kirk 4 (34-ac)	3000	3750
Rudco O. & G. Co., Nicholson 5 (113½-ac)	1200	3658
Selby O. & G. Co.-Lewis Prod. Co., Snavely 22-A (214½-ac)	4200	3575
Shell, S. C. Fishburn 19 (100-ac)	9600	3530
H. R. Smith, Inc., W. A. Bauknight 13 (70.6-ac)	9400	3620
Stanolind, McKinley Bros. 57-B (84-ac)	8200	3656
Skipper-Garner 4 (31.22-ac)	2500	3525
Sun, A. B. Medlin 1 (62.05-ac)	190	3770
Sun-Atlantic, M. Thomas 14 (72.2-ac)	9500	3531
Tide Water Associated, B. Moore 18 (90-ac)	9700	3547
United E&W Oil Co., E. L. Walker 16 (62-ac)	3000	3606
ANDERSON COUNTY (Cayuga)—		
Tide Water Associated-Seaboard, Wortham 4 (100.87-ac)	3500	4090
ANDERSON COUNTY (Long Lake)—		
Tide Water Associated-Seaboard, Shaw-Cern 6 (1216-ac)	2500	5343
FRANKLIN COUNTY (Talco)—		
Cliff Camp Drlg. Co., O. E. Bolin 1 (3.08-ac)	563	4319
HENDERSON COUNTY (Cayuga)—		
F. M. Allison Prod. Co., B. H. Wathen 4 (106-ac)	3500	4092
HOPKINS COUNTY (Sulphur Bluff)—		
Sun, B. W. Davis 1 (473.38-ac)	134	4517
TITUS COUNTY (Talco)—		
G. M. W. O'l Co., Talco Townsite 38-A, lot 1, blk 25	344	4320
W. B. Hinton et al, L. H. Wilson 11 (119.51-ac)	449	4277
Housh & Thompson, Inc., Moore Grocery 5 (42.94-ac)	476	4300
Humble, M. Batson 1 (25.88-ac)	415	4336
Pat Davis 4 (49.8-ac)	229	4335
Humble, Adams & Lyles, J. R. Milligan 3 (80 81-ac)	104	4330
O'Neal & Rotondi, Howerton-Edwards 1-B	243	4330
ANDERSON COUNTY—		
C. & G. Oil Co., F. A. Newson 1 (30-ac)	*	6004
RUSK COUNTY—		
Nivla Oil Corp. et al, Citizens Bank 1 (50-ac)	*	6802
RED RIVER COUNTY—		
Texas Trading Co., Southern Pine Lumber Co. 1 (102-ac)	*	2385
TITUS COUNTY—		
J. N. Buchanan & G. E. McGrede, Cal Russell 1	*	2200
HARRISON COUNTY (Waskom)—		
Grogan Oil Co., H. B. Turner 1, G. P. Harrison sur	7	2424
MARION COUNTY (Pine Island)—		
Monticello O&G Co., Flannagan 1, M. G. Nall sur	8	969
CASS COUNTY (Rodessa)—		
R. W. Norton, Hussey 1, Priscilla Evans sur	115	6082
MARION COUNTY (Rodessa)—		
Gulf Oil Corp., Lizzie Henderson 1, R. Bennington sur	1800	6054

*Failures; †Junked; ¶Million cu. ft. gas.

Cedar Creek area gets Austin chalk oil.

* * *

Loma Novia sand may connect Labbe and Seven Sisters.

San Diego.—An extension of more than one mile southwest has been provided to Loma Novia production of Labbe field, Duval County, through completion of Sun Oil Company's Gasper Rodriguez 2. This discovery is in turn located one mile northeast of the same horizon in the Seven Sisters field and may tend to connect both areas.

The Sun well is located 1725 feet from the north line and 990 feet from the east line of the south half of Section 212. It cored sand from 2799-2818½ feet and set casing at 2800 feet. The well flowed 65 barrels of fluid on a five-hour test through ⅛-inch choke, registering pressures of 260 pounds on tubing and 710 pounds on casing. One percent was sand, 3 percent water, and the remainder pipe line oil.

The Humble Oil & Refining Company and the Magnolia Petroleum Company are developing the Loma Novia production to the northeast, while S. & D. Daube Company is carrying on a drilling program to the southwest of the above test.

Ezzell Ranch Extension

Another important Mirando district extension was virtually assured late in the week with Bob Holland and Henderson Coquat preparing to drill plugs and test Matikin 1, Live Oak County, which is attempting to extend the Ezzell Ranch field ¾ miles northeast. A sand was cored at 1485-88 feet, shale to 1496 feet, and oil sand to 1502 feet, A drill stem test was run with seat at 1480 feet, recovering 160 feet of oil, 32 feet of mud and no pressure in 12 minutes through ⅜ inch chokes, top and bottom. Casing was landed at 1482 feet. This test is in Block 2433, Simmons Subdivision, and is the first test to be drilled out of the Harry Ezzell Ranch on this structure. It suggests that a drilling campaign on smaller tracts will shortly be underway to materially boost operations in this prolific shallow area.

Waiting for Pipe Line

Edwin M. Jones, who controls the majority of the structure on the Ezzell Ranch, just across the line into McMullen County, is drilling a number of wells to the sand, setting casing and not completing. No outlet will be available until a pipe line project to Kitty, immediately planned, is completed. At this time, Jones will perforate casing in the drilled wells opposite the producing horizon and they will be put into the tanks.

North Sweden Growing

North Sweden field, Duval County, held the deeper interest in the Mirando sector. V. L. Blanchard's Rosa V. de Puig 1 was preparing to drill plugs and perforate in the Cockfield sand, apparently providing a 1¼ mile northwest extension to this producing area. The test, as a commercial producer, will be the second in this horizon in the field and will open a vast area on the western side to this type of development, more than 600 feet below the regular producing zones.

The Blanchard test cored oil sand 5395-5402 feet, sand cap to 5405 feet and sand to 5411 feet. A drill stem test recovered 425 feet of 44.6 gravity oil and 60 feet of oily mud, together with 250 feet of salt water under 26 pounds pressure in 18½ minutes through ⅜ inch chokes. The test was then reamed down and a test at 5404-11 developed 190 feet of salt water and 80 feet of mud, indicating that the water intrusion is from the lower sand. The test then was drilled ahead to 5437 feet and pipe landed on bottom.

Being Extended South

A slight south extension to the field is being provided by Standard Oil Company of Kansas' Southland Life Insurance Company well, which is flowing into the pits making considerable oil and some wash water from sand at 4767-75 feet.

Over in Webb County, Oilton-Killam district remains a hot spot of activity, several edge wells being completed as good producers and additional tests being started in trend with the two producing areas.

Bastrop County gets its first Austin chalk field

San Antonio.—Bastrop County finally has received its first Austin chalk oil field, the discovery being by R. Olsen Oil Company in Mattie Murchison 1. The well, located about 4 miles southeast of Cedar Creek, flowed at the rate of about 12 barrels per hour through open tubing at 1925 feet, 97 feet in the chalk, after being treated with 4000 gallons of acid.

This test is in the northwestern portion of a 505-acre tract in the Addison Litton Survey, and on a block originally assembled by W. D. Bacon of San Antonio. It was worked by L. B. Snider, geologist, who mapped a rather long northeast-southwest fault.

It found the top of the chalk at 1828 feet, where casing was set. The top 18 feet of chalk section was well fractured and carried good saturation. Elevation is 438 feet, derrick floor.

Gets Little Oil in Chalk

Two miles to the northeast, Hantho-Nelson's M. K. Litton 1, elevation 419 feet, found the chalk at 1972 feet, and at 2112 feet acidized and made a small amount of oil. It is drilling at 2260 feet in the Georgetown on an Edwards lime contract. Both wells are believed to be on the same fault, which would indicate that a rather large closure builds up to the southwest from the Litton test. The Murchison producer found the chalk at a minus depth of 1390 feet, whereas the Litton topped it at minus 1553 feet, or 163 feet lower. It is likely that some of the chalk was faulted out in the Murchison, accounting for a portion of the higher subsurface elevation.

Chalk Oil Attractive

These Austin chalk strikes are looked upon as being rather important, as they are almost entirely developed by independent companies. Close spacing, short offsets, cheap drilling costs and apparently good profit, bring drilling booms to these districts as they are uncovered.

Edna May Oil Company was still testing Mrs. C. N. Cassin 1, south of San Antonio in Bexar County. The well, originally bottomed at 1349 feet, plugged back and drilled out to 1310 feet, top of the Buda limestone, and acidized with 1500 gallons, after which it pumped about 25 barrels of 19 gravity oil and a little water.

PRODUCTION LOANS

at

REASONABLE INTEREST RATES

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ESCROWS TRUSTS

SOUTH TEXAS Completions

Company, Well, Location	Init. Prod. Bbls.	Depth
SAN ANTONIO DISTRICT		
BASTROP COUNTY—		
Conservative Oil Co., Wentland-Bowen 1, 450 ft wl, and projection of southerly nl of 167.5-ac tr, Freeman Wilkinson sur	*	2493
Marts and Beavans, Gillum 1, 150 ft sel, 150 ft swl, 143-ac tr, Thomas Garretson sur No. 19	*	2620
R. Olsen Oil Co., Mattie Murchison 1, commence at sw corner 64-ac tr, thence sw along nwl Murchison 505-ac tr 1350 ft, thence se at r/a 1523 ft to lcn, Addison Litton sur	450	1997
Texas Northern Oil Corp, John Barton et al 1, 3863 ft n, 85 deg e from ne cor of J. B. Walter sur No. 7, but in J. Rogers sur No. 6	*	2927
BEXAR COUNTY—		
Earl M. Baker, E. M. Baker 2, R. Rolen sur, (Von Ormy)	2	840
CALDWELL COUNTY—		
Fred Adams and C. F. Richards, Flowers and Leyendecker 3, Dillard Cooper and J. A. Neill survey (Branyon)	90	2205
F. Blundell, Fee 1, R. B. Jarmon sur (Branyon)	*	2286
R. B. Bryant, G. S. and W. P. Walker 1, Solomon Seale sur (Dunlap)	*	2460
E. R. Cosby, Crenshaw 1, J. Burleson sur (Lytton Springs)	*	1485
Edwill Oil Co., L. K. Brown Est 3, C. M. Cannon sur (Buchanan)	35	2155
B. F. McConnell 4, Wm. Spillers sur (Buchanan)	35	1947
Goode and Mayton, B. J. McConnell 3, Wm. Spiller sur (Buchanan)	80	1931
McAlester Fuel Co., Callie Miears et al 1-A, C. M. Cannon sur (Buchanan)	600	2332
GUADALUPE COUNTY—		
Josey Oil Corp. et al, J. Seeligmann 1, 150 ft nwl, 350 ft nel, 43-ac tr in J. W. Williamson sur	*	2600
MEDINA COUNTY—		
Gates-Hull-Mead, Emil Kreisle 1, 800 ft nl and 2220 ft el, sur 908, 6 mi sw Castroville	*	510
LAREDO DISTRICT		
DUVAL COUNTY—		
Argo Oil Co., Juan Carrillo 6, sec 9, Sweden subd, Santos Flores gr (N. Sweden)	500	4773
Arkansas Fuel Oil Co., Mabel Rossi 4, sec 10, Sweden subd, Santos Flores gr (N. Sweden)	950	4779
Benedum & Trees Oil Co., F. Vaello Puig 5, San Andres gr (N. Sweden)	450	4793
Central Producers, Inc., Herman Wendt 4-A, sur 43 (Government Wells)	30	2307
Government Wells Oil Co., Inc., H. A. Lundell 6, H. E. & W. T. RR sur (Lundell)	150	1530
Frank J. Gravis, F. Vaello Puig 3-A, San Andres gr (N. Sweden)	475	4819
Humble, Mary L. Davidson 1, 2100 ft wl, 5200 ft sl of sec 218, 1½ mi se Seven Sisters field	*	3055
Magnolia, DCRC 5, J. Poitevent sur (Piedre Lumbre)	75	2011
A. L. Labbe 8, H. & G. N. sur No. 1 (Labbe)	¶25	2862
Sarnosa Oil Corp., E. Weil Est. 17, M. Rogers sur (Sarnosa)	90	2418
Standard of Kansas, Lillian Parr 8, Parr tr San Andres gr (N. Sweden)	475	4737
E. B. Walstead et al 2, sec 9, Sweden subd, S. Flores gr (N. Sweden)	425	4804
Tide Water Associated, J. R. Foster 2, 2310 ft el, 2270 ft nl, 600-ac tr, J. Poitevent sur, 1 mi w Eagle Hill field	*	3035
McMULLEN COUNTY—		
Edwin M. Jones, Harry Ezzell 6, 330 ft sl & wl of nw¼ se¼ sec 60, Ezzell Ranch sub, Ragland sur	*	2516
STARR COUNTY—		
Gilcrease Oil Co., Kelsey Bass 2, 1545 ft nl, 2027 ft wl, sec 9, por 75-76-77	*	420
Sun, G. P. Wardner 4, w 2/7 por 84, (S. Ricaby)	150	1759
WEBB COUNTY—		
Bailey, Bailey & Thorman, D. G. Garcia 3A, sec 786 (Killam) work over	50	2074
Mills Bennett, D. G. Garcia 1, sur 337 (Killam)	¶2	2574
Gypsy Oil Co., M. G. Martin 3, sur 458 (Oilton)	275	1926
O. W. Killam, D. G. Garcia 6, sur 786 (Killam)	165	2009
E. J. Pearl et al, De La Garza Est. 1, 1892 ft nl 600 ft sur 262	*	2504
Rowan & Hope, Laurell Bros. 1, nw¼ sur 1006 (Oilton)	175	1970
ZAPATA COUNTY—		
O. W. Killam, A. M. Bruni Est. 2, blk 84, Killam subd, El Ranchito Pasture Borrego gr, 660 ft sel, 330 ft swl	*	1670
B. W. Roscoe, C. Bustamante 31, sh 33 Fansler Partition, Comitas gr (Escobas)	35	1224
The Texas Co., Whitehead 105, Cerrito Blanco gr (Escobas)	50	1316
Whitehead 106, Cerrito Blanco gr (Escobas)	50	1270
United Production Corp., Whitehead 4, Cerrito Blanco gr (Escobas)	*	2009
CORPUS CHRISTI DISTRICT		
ARANSAS COUNTY—		
Atlantic Ref. Co., Mrs. Elizabeth Murray 2-A, blk 38, McCampbell Ranch subd (McCampbell)	650	7120½
Mrs. Elizabeth Murray 2-B, blk 14, McCampbell Ranch subd (McCampbell)	475	7110
W. A. Scrivner 2, blk 11, McCampbell Ranch subd (McCampbell)	675	7118
Rutherford Oil Corp. & Wilson, S. J. Conn 1, blk 10, McCampbell Ranch subd, James Orrick sur (McCampbell)	650	7140
BEE COUNTY—		
W. C. McBride, Inc., Mrs. M. Schnieder 2, E. L. & R. R. sur (Plummer)	175	3074
BROOKS COUNTY—		
Standard Oil Co. of Texas, Mestina Oil and Gas Co. 5, (lease 1), La Mestina y Rafael Garcia gr (Alta Mesa) (perf 4513-20 ft) ¶5 &	125	5055
CALHOUN COUNTY—		
Humble and Plymouth, E. H. Welder 13, J. M. Rios sur (Heyser)	380	5494
Normandie Oil Co., J. G. Cook 3, Agaton Sisneros sur (Heyser)	150	5600
Portilla Drilling Co., P. H. Welder 2-B, J. M. Rios sur (Heyser)	*	6011
KARNES COUNTY—		
Dirks Bros., E. Ruhmann 2, James Johnson sur (South Burnell)	600	3620
LIVE OAK COUNTY—		
Mills Bennett, J. W. Nichols 1, 2900 ft nl, 990 ft el, Patrick Henry sur	*	2016
C. E. Jacobs, J. W. Nichols Ranch 1, 250 ft nl, 500 ft wl of 20-ac lse, blk 2, Simeon Ryan sur	*	1645
NUECES COUNTY—		
R. B. Bryant and H. H. Howell, Anton Kocurek 4, J. H. Smith sur (Saxet)	300	4200
Francis Plachy 2-B, John Smith sur (Saxet)	*	4432
Conroe Drilling Co., Hagen and Stewart 1, sec 206, Bishop subd (South Agua Dulce)	120	6815
Lonnie Glasscock, Glover Johns 1-A, W. S. McGregor sur (Saxet)	725	5308
Houston Oil Co., T. H. Isensee 3, blk 11, Sheppard Farm Lots (Saxet)	112	4868
Humble and Barnsdall, R. G. Chapman 1, blk 4, Flour Bluff and Encinal Gardens tr (Flour Bluff)	425	6664
Elizabeth Roberdeau 3, lot 6, blk 49, (Flour Bluff)	500	6659
Turcotte 1, lot 13, blk 56, Flour Bluff & Encinal Gardens tr (Flour Bluff)	500	6659
Kepley Prod. Co., M. V. Donnigan 6, sec 7, Ranch 5 (Saxet)	350	4903
Renwar and Maryland, J. W. Gallagher 1, John H. Smith sur (Saxet)	25	4318
Rand Morgan 1-C, A. B. and M. sur No. 415 (Saxet) (was Conroe No. 1-A) ¶5 &	175	6865
Taylor Pet. Co., J. B. Dunn et al 4, Villareal grant (Saxet Heights)	180	4060
T. and T. Oil Co., Cain and Sechrist 5, blk 23, Russell Farm Lots (Saxet)	650	4876
REFUGIO COUNTY—		
Houston Oil Co. of Texas, F. B. Rooke 33, T. Mullen sur (Refugio)	775	6126
Illinois Pet. Co., Wilson Heard 4-C, M. J. Ximines sur (Tomoconnor-Greta)	2250	5893
Quintana Pet. Corp., Mary C. Bauer 4, M. J. Ximines sur (Tomoconnor)	1800	5900
Tom O'Connor 18-C, George W. Main sur (Tomoconnor)	2750	5911
Wynne Drilling Co., J. A. Lambert 1, 11, 800 ft sl, 1727 ft el of w½ of James Power and James Hewitson sur, A-53	*	6013
SAN PATRICIO COUNTY—		
Buckingham Oil Co., Jean Davis (McCampbell) 1-C, 330 ft nl, 330 ft sel, of 34.8-ac tr, being sec 27, Peterson subd, ¼ mi sw McCampbell field	*	7150
Humble, J. W. Mayo 26, J. H. W. Ottman sur (Taft)	250	3980
Plymouth Oil Co., J. F. Odem 1-A, 16 ft sl, 243.6 ft wl, subd 2, Archibald Herron sur: begin at intersection of the el of the Odem tract, and the RR: go 8131 ft nw along sw line or the RR right-of-way; thence 2132.2 ft n at r/a to the location; ½ mi east of Sinton	*	6724
VICTORIA COUNTY—		
Barnsdall and American Liberty, Pickering-Roos 23, S. A. & M. G. sur No. 5 (Placedo)	275	4769
Commonwealth O&G Co., W. H. Bennett 6, J. E. Galban survey (Heyser)	375	5750
Magnolia, Henderson - Pickering 4, Wm. Rupley sur (Placedo)	276	4771
Sun, W. N. Coffey 1, J. E. Galban sur (Heyser)	475	5747

*Failures; †Junked; ¶Million cu. ft. gas.

Test on Lamar prospect may complete wet gas well

Corpus Christi.—Three wildcats, all below 7000 feet, were preparing to make production tests, indicating considerable new deep producing area for South Texas Gulf Coast. One paves the way to a new 8000-foot field, deepest in the territory, another is opening a new deep horizon, while the third apparently extends a present field 2 miles to the southwest.

Barnsdall Oil Company's Kate Edwards 1-A, William Lewis Survey, on the Lamar prospect in Aransas County, was waiting on cement after setting a string of 7-inch casing below 8100 feet. The test originally had drilled to 9785 feet, stuck drill stem, and after recovering a portion of it, sidetracked to 8267 feet. The well is expected to make a wet gasser. Another deep well, possibly to 11,000 feet, is reported to have been located on the block.

May Extend McCampbell

Following along trend, but in San Patricio County, Danrey Oil Company's Jean Davis 1-A, William Boyd Survey, may be extending the McCampbell field 2 miles southwest in the 7100-foot Frio sand. The well is reported to have cored a saturated section just below this level and has set a string of 5-inch casing. It previously showed Marginulina oil around 6606 feet, set 7-inch on bottom, but developed salt water.

Seaboard Oil Corporation of Delaware's K. L. Shaffer 1, deep test in Luby field, Nueces County, developed a casing leak and was testing for its location. The well, an east offset to the discovery, is bottomed at 7311 feet with casing set on bottom. On a 10-minute drill stem test from 7301-11 feet it recovered 3910 feet of fluid, one-half of which was oil and the remainder salt water. Completion will be attempted through perforations. This is the second show this well has had in the Frio below 7000 feet, the other being at 7004-15 feet, where oil and salt water were recovered.

Saxet Sand Extended

Southern Minerals Corporation provided a 1500-foot east extension to the 6700-foot sand of the Saxet field of Nueces County, where it completed Bessie Elder 5 at 6733-41 feet, top of sand being logged at 6731 feet. It is estimated as an average well.

TEXAS GULF COAST

Hitchcock may be new field for Galveston County.

* * *

Friendswood's third producer extends field.

Houston.—Possibilities of a new oil field at Hitchcock, Galveston County, looked bright last week when Maco Stewart cored oil sand in Maco Stewart 1, J. Spillman Survey, and set 5½-inch casing for a production test after coring several showings of oil down to 5156 feet. It is estimated the test has from 21 to 28 feet of sand and shale showing oil. The well is 300 feet north of Shell Petroleum Corporation's Maco Stewart 1, which drilled to 10,460 feet, plugged back, and abandoned. The latter company's well indicated it might produce commercial oil and gas.

In the Bammel area, Harris County, Superior Oil Producing Company's Butler 1, J. Ehrhardt Survey, jumped back into the spotlight last week when a production test at 6170 to 6175 feet showed gas, wash water and a reported pressure of 1900 pounds through ¼-inch choke.

Friendswood Extended

Friendswood field, Harris County, was extended 933 feet northeast last week when Humble Oil & Refining Company completed its second well in the field. Beamer 1, T. Choate Survey, came in flowing 610 barrels daily through ¼-inch choke with tubing and casing pressures of 900 pounds from Frio sands logged from 5769 to 5970 feet. Five-and-one-half-inch casing was cemented at 5750 feet. Beamer 1, reported to be higher than the discovery well on structure, is the third oil producer at Friendswood.

V. H. Barsodie's second well at Friendswood, Ross 2, is reported in sand showing oil at 6099 feet. Casing is being run. Top of the sand is understood to be around 6079 feet.

Hastings Extended North

Hastings, the most active field in the Texas Gulf Coast, received a 2500-foot north extension last week when J. Simmons' C. H. Alexander, H&TB Survey, Section 28, cored about 107 feet of oil sand and set 7-inch casing at 6070 feet for a production test. Sand showing oil was logged from 5963 to 6070 feet.

Six wells were completed at Hastings last week by Stanolind Oil & Gas Company, and at the end of the week the operators had four more wells waiting on cement to set before completing. Humble Oil & Refining Company has two wells in the district waiting on cement to set, and J. Simmons has one.

New Sand for Spurger

A new producing horizon evidently has been discovered at Spurger field, Tyler County, by Republic Production Company. Hurd 4, 933 feet north of Hurd 3, N. Hurd Survey, was bottomed in sand showing oil at 7705 feet. A drill stem test from 7698 to 7705 feet through ¼-inch choke on top and bottom of the testing tool in 8 minutes recovered 1 joint of water and 17 joints of pipe line oil. Seven-inch casing is at 7635 feet, and 5-inch liner will be run to bottom for a production test.

East of production at Silsbee field, Hardin County, Republic Production Company completed Brooks 20, G. W. Brooks Survey, flowing 1,500,000 cubic feet of gas daily and 48 barrels of high gravity oil through ¼-inch choke with tubing pressure of 1750 pounds and casing pressure of 2100 pounds, from sands at 6915 feet.

Northwest of LaPorte, Harris County, West Production Company is reported to have abandoned Underwood 1, N. Clopper Survey, at 8500 feet after running an electrical logging device. No shows were reported in the wildcat.

Southwest of production at Seabreeze, Chambers County, Sun Oil Company was preparing to make a drill stem test on F. Jackson 1, A. Yborbo Survey, at 8582 feet. Seven-inch casing was cemented at 8578 feet.

Nome Extension Catches Fire

Shell Petroleum Corporation's Texas Public Service 4, most easterly well at Nome field, Jefferson County, discovered a new gas sand at 4745 feet after plugging back from 6032 feet. When a Christmas tree was being installed the well started blowing out. During an electrical storm September 1 a bolt of lightning hit the well and set it on fire.

Garwood May Have Producer

Indications that the Garwood prospect, Colorado County, will yield commercial oil were found in Coyle-Concord's Mary South 2, I&GN Section 41. Sands showed oil from 6032 to 6034 feet, the bottom of the hole. A drill stem test from 6028 to 6034 feet, made in 7 minutes through ¼-inch chokes, showed 600 pounds pressure and 30 feet of 53.8 gravity oil.

Withers field, Wharton County, was extended 933 feet south last week by The Texas Company's Thompson 1, Wm. Pettus Survey, when it came in flowing 195 barrels of oil in 15 hours through 12/64-inch choke with tubing pressure of 525 pounds and casing pressure of 560 pounds. The hole is bottomed at 5548 feet and 7-inch casing was set at 5542 feet with 8 feet of screen.

A new wildcat location was announced for the Blue Basin prospect, Wharton County, where a half dozen dry holes have been drilled and 1 gas well. Buck & Holt made location for L. Rainer 1, 466 feet southwest of the northeast line and 466 feet northwest of the southeast line of the south 80 acres of a 160-acre tract in the F. C. McReynolds Survey.

East of the discovery well at Palacios field, Matagorda County, Atlantic Refining Company's Foley Land Company 2-A, L. Goodwin Survey, was recemented at 7874 feet to drill deeper. Last week the casing was perforated from 7741 to 7750 feet, 7716 to 7727 feet, and from 7668 to 7670 feet. A 20-minute drill stem test through ¼ and ⅜-inch chokes on the testing tool showed gas and distillate. The same operator's Rolf 1 was cutting and pulling at 8840 feet. At the end of the week the crew had pulled about 6000 feet of pipe out of the hole. The well is trying to blow out, showing about 4000 pounds pressure. An 18-pound mud is being used.

TEXAS GULF COAST Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
AMELIA—		
Humble, Gist Realty Co. 1	*	lcn.
Pinchback & Harrison 1	*	621
Quinn 10	518	6776
Sumpter 1	249	6785
Tyrell Combest 10	216	6778
Tyrell Combest 12	486	6778
ANAHUAC—		
Humble, Clark 15	624	7080
Johnson 12	624	7080
Tyrell 12	650	7080
Wilcox 4	624	7090
DICKINSON—		
Humble, Leake 1	620	8115
Malley 1	784	8731
Maco Stewart A-15	*	lcn.
Pure, Sealy Hutchins 2-B	511	8104
FRIENDSWOOD—		
Humble, Beamer 1	610	5970
HASTINGS—		
Stanolind, Barnett 2	565	6074
Brown 5	636	5805
Brown B-6	602	5705
Drake 12	612	5450
Wagner-Sparks 1	648	6080
Surface 5	507	6090
HAWKINSVILLE—		
Sun, Craig 2	*	6905
HIGH ISLAND—		
Stanolind, Cade A-62	343	5413
LOCHRIDGE—		
Kirby Pet. Co., Baker 1	588	6354
MANVEL—		
Texas Co., Way B-4	132	4127
MARKHAM—		
Harrison & Abercrombie, Kountz 10	275	3911
ORCHARD—		
Gulf, Moore 54	240	3150
SILSBEE—		
Republic, Brooks 20	¶1½ & 48	6915
SEGNO—		
Gulf, Quinn B-1	385	5190
SOUTH BAY CITY—		
Hammon Exploration Co., Crooker 2	475	8160
SOUTH COTTON LAKE—		
Salt Dome, Lawrence 2-B	240	6512
SOUTH HOUSTON—		
Stanolind, Barnett 2	444	4050
TOMBALL—		
Humble, Jane Kuehn 5	500	5558
WITHERS—		
Texas Co., Thompson 1	312	5548
BRAZORIA COUNTY—		
Humble, Munson 1, e of East Columbia, S. Carter sur	*	lcn.
Ohio Oil Co., Kemper 1, Chocolate Bayou area, H&TB No. 33	*	7511
Texas Gulf Prod. Co., Adams 1, Chocolate Bayou area, H&TB No. 40	*	7508
HARRIS COUNTY—		
West Prod. Co., Underwood 1, nw of LaPorte, N. Clopper sur	*	8500
LIBERTY COUNTY—		
J. G. Mayo, Gibbs Brothers 1, ne of Davis Hill, J. D. Martinez sur	*	6020

*Failures; †Junked; ¶Million cu. ft. gas.

SOUTH LOUISIANA

Three wildcats loom as probable field openers.

* * *

Two sands added to Charenton's producing horizons.

Lake Charles.—Three wildcats which may open new oil fields, new sands discovered at Valentine field, Lafourche Parish, continued activity in proven fields, new wildcat locations were the outstanding developments in the Louisiana sector of the Gulf Coast last week.

North Crowley Looks Good

Humble Oil & Refining Company recovered salt water last week when a drill stem test was made of lower Frio formation in Federal Land Bank 1, but this does not dampen prospects of the wildcat's becoming the discovery well of a new field in Section 34-8s-1e, North Crowley prospect, Acadia Parish. Casing was perforated with 10 shots from 8730 to 8740 feet, and a drill stem test through ¼-inch chokes made 360 feet of gas cut mud, 460 feet of mud and salt water, and 7243 feet of salt water. No pressure was shown while the test was being made. The hole has been plugged back to 8640 feet and another attempt will be made to develop production.

Federal Land Bank 1 recently indicated it would open a new oil field when a drill stem test from 8086 to 8106 feet showed 1170 feet of pipe line oil and 180 feet of oil cut mud through ¼-inch chokes.

Porosity at Bateman Bay

Although not confirmed, it has been reliably reported that The Texas Company has 60 feet of formation showing oil in State Bateman Bay 1, south of Morgan City, Section 21-16s-12e, St. Mary Parish. Last week the crew was coring ahead below 10,623 feet. An electrical logging device run from 9600 to 9660 feet showed a high porosity and resistivity. Those informed say this sand should produce oil in commercial quantities.

Does Not Stop at Sand

Another wildcat which has indicated it would open a new oil field in the South Louisiana coastal country is Gulf Refining Company's State PP 3, southwest of Marchland salt dome and in Timbalier Bay, Section 36-23s-21e, Lafourche Parish. The test was drilling in shale below 6919 feet after a drill stem test the previous week showed 1000 feet of 32 gravity oil in Miocene sands from 6749 to 6806 feet. A string of 9⅝-inch casing was set at 6832 feet to protect the sand.

Pan American Production Company discovered a new producing horizon at Valentine field when Harange 9, Section 8-17s-20e, came in flowing 18 barrels per hour from sands showing oil at 6082 to 6150 feet. Casing was perforated from 6083 to 6115 feet. The well, producing through ¼-inch choke, had a tubing pressure of 150 pounds and a casing pressure of 590 pounds. Harange 9 was drilled to 6960 feet. Seven-inch casing was cemented at 6160 feet.

Pan American Production Company has two other wells active at Valentine. Both are coring for the 5400-foot sand. Harange 8 has cored 15 feet of sand showing oil and will take another 5-foot core and set casing. Top of the sand was logged at 5400 feet. Harange 10, Section 7-17s-20e, was down to 5371 feet and should pick up the sand in the next day or two.

Two New Sands at Charenton

Pan American Production Company also hit two new sands at Charenton field, St. Mary Parish. Veeder 1, Section 30-13s-10e, has set 7-inch casing at 2600 feet after drilling to 9462 feet where the drill pipe stuck. Sands showing oil were logged from 1897 to 1905 feet and from 2590 to 2600 feet. If the 2600-foot sand is productive it will be the shallowest producing sand in the field. Veeder-Hunt 1 also hit a new sand at 3960 feet. Seven-inch casing has been set and perforated from 3940 to 3948 feet. The well was washed and it failed to flow. Swabbing was commenced, and Veeder-Hunt came in flowing 40 percent oil and 60 percent washwater when the swab was lost in the hole. Tubing was pulled and it was found that the cement had not set satisfactorily around the 7-inch casing.

Pan American Production Company is trying to develop a deeper sand at Charenton. Lawes 4, Section 30-13s-10e, set 7-inch casing at 8586 feet and will drill deeper. The well is being drilled as an exploratory test and no objective depth has been set.

Charenton field is producing from sands at 4950 and 7200 feet. If the 2600 and 3900-foot sands are productive, Charenton will have four producing horizons.

Northwest of Charenton field, Petroleum Heat & Power Company made location for D. Parro 1, 650 feet north and 85 feet west from where the government canal meets the south shore of Grande Lake, Section 9-13s-9e, St. Mary Parish.

SOUTH LOUISIANA
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CAMERON MEADOWS—		
Magnolia, Cameron Meadows 20...	*	5715
FAUSSE POINT—		
Texas Co., Fausse Point 3.....	*	4524
JENNINGS—		
Raiter & Foster, Cockrell 1	*	4127
Stanolind, Crowley Oil & Mining Co. 111	10	1926
NEW IBERIA—		
Texas Co., Duhe 3	220	5064
SULPHUR—		
Union Sulphur, Fee 848	921	4934
VALENTINE—		
Pan American, Harange 9	432	6115
WEST HACKBERRY—		
Stanolind, M. Duhon 5.....	466	4875
JEFFERSON DAVIS PARISH—		
Stanolind, Calcasieu National Bank 2-B, South Elton area, 28-7s-3w..	128	8965
PLAQUEMINES PARISH—		
Humble, Orleans Levee Board 4, Potash area, 11-18s-15e	*	932

*Failures; †Junked; ¶Million cu. ft. gas.

China Well Making Distillate

In the South Elton area or China prospect, Jefferson Davis Parish, Amerada Petroleum Corporation and Stanolind Oil & Gas Company's Calcasieu National Bank 2-B, Section 28-7s-3w, the first commercial gas and distillate well in the area, was making 128.64 barrels of 52 gravity distillate along with 3,800,000 cubic feet of gas daily through ¼-inch choke. Tubing pressure was 3000 pounds; casing pressure 3200 pounds. The well was brought in the previous week making gas. Calcasieu National Bank 2-B was drilled to 9851 feet and was plugged back and tested in sands from 8955 to 8965 feet.

The first well drilled in the South Elton area, Calcasieu National Bank 1, blew out in Vicksburg at 9131 feet and was abandoned. Calcasieu National Bank 2-B is approximately 2000 feet west of the blowout.

After it had made 5,000,000 cubic feet of gas daily, Union Sulphur and Shell Petroleum Corporation decided to kill T. R. S. Farms 1, Section 23-10s-4w, South Roanoke area, Jefferson Davis Parish, and test sands from 8605 to 8610 feet. Last week casing was perforated with 28 holes from 9136 to 9140 feet, and the well came in flowing gas through ¼-inch choke with a tubing pressure of 3500 pounds. T. R. S. Farms 1 was drilled to 9151 feet and 7-inch casing was set at the bottom.

Derrick in Gulf

After several months of driving piling and building derrick foundation, Superior Oil Producing Company will move in rig to start drilling on Gulf of Mexico 1 out in the Gulf of Mexico, off shore from Cameron Parish. When the well starts drilling it will be the first well ever drilled offshore in the Gulf.

At Big Lake field, Cameron Parish, Union Sulphur Company's J. O. Hebert 1, a workover and the first commercial oil well for the field, was retested the past week after plugging back to 8307 feet. Casing was perforated from 8300 to 8307 feet and the well came in flowing 500 barrels of oil daily through ¼-inch choke showing 8 percent water. Later the well was making 480 barrels daily, 60 to 80 percent salt water.

Union Sulphur Company's P. O. Hebert 1 set 7-inch casing at 8441 feet and perforated casing with 30 holes from 8384 to 8390 feet. After setting screen and liner the well tested salt water. Cement was squeezed through the perforations, and the company probably will test sands from 8183 to 8185 feet.

NORTH LOUISIANA

Cotton Valley extension makes distillate.

* * *

Arkansas sector gets most attention at Rodessa.

Shreveport. — The Miller County, Arkansas, extension of Rodessa which added four producing wells from the Mitchell-Gloyd horizon last week, leads in Rodessa drilling operations with 25 active operations. Five new locations were made in this part of the field last week.

Two of these tests are east of production, both being operations of Freeman W. Burford. They are August 1, NE SW 8-20-27, which is drilling below 2958 feet and Garver-Means 1, SW NW 11-20-27, drilling below 1520 feet. Ed Hardin, Shreveport insurance man, has leased 100 acres in Section 5-20-27. Magnolia Petroleum Company is preparing to make location for a test in 7-20-27.

The Cass County, Texas, side of Rodessa has 17 active operations under way and Marion County, Texas, has 19 active tests including seven new locations, most interesting of which is Turner and associates' T. H. Scuddy 1, James Hanks Heirs Survey.

The Caddo Parish, Louisiana, side of Rodessa has only 16 active operations under way.

Large Gloyd Saturation

The Gloyd horizon, second producing zone in Rodessa proper, carries a large body of saturation in the Jefferson offshoot of the field in Marion County, Texas.

This was revealed last week when Gulf Oil Corporation completed Lizzie Henderson 1, R. Bennington Survey, flowing 73 barrels of oil per hour through ¼-inch tubing choke from 6054 feet, with 18 feet of Gloyd formation from 6036 to 6054 feet heavy with oil saturation; elevation was 274 feet. Tubing pressure was 415 pounds and casing pressure 450. The Henderson gas-distillate sand was logged from 6015 to 6029 feet. The gas-oil ratio in this well was 580 to 1. Location is 1500 feet west of Holcomb & Thomasson's Lizzie Henderson 1, R. Bennington Survey, previously the lone producer in the Jefferson area.

Last week Holcomb & Thomasson's second test, located 1700 feet northwest of their first well, missed a core from 6024 to 6031 feet but recovered one well saturated with oil from 6033 to 6051 feet and were preparing to set casing; elevation is 270 feet.

One-fourth mile west of this test in the same survey, Fohs Oil Company made location for Neilon 1, in east five acres of a 70-acre tract. Shell Petroleum Corporation's Lizzie Henderson 1, R. Bennington Survey, is drilling below 3350 feet

163 Rodessa wells making salt water

Shreveport.—A total of 163 wells in the Rodessa field during the last week of August were showing varying amounts of salt water and basic sediment; 131 are on the Louisiana side, 29 are in Cass County, Texas, and 3 in Marion County.

Of those showing water in Louisiana, 16 were listed as "off production," 4 "dead," and 2 were classed as gas wells. United Gas Public Service Company's I. L. Young 1, Section 21-23n-16w, discovery oil well of the field, completed July 16, 1935, is showing only three-tenths of one percent water. Ten of the wells on the Louisiana side making water are pumping.

In Cass County 2 of the 29 wells making water were listed as dead and 2 were pumping. The pumpers are Hunt Production Corporation's Shelton 1, James Davenport Survey, west outpost well, which is making 95 percent water, and United Production Corporation's Cunningham 1, John Collins Survey, which is making 10 percent water.

The 3 Marion County wells making small amounts of water are: The Hunter Company's E. W. Fonda 1, A. de los Santos Coy Survey, two-tenths of one percent; the same company's E. W. Fonda 2, same survey, one-tenth of one percent; and Holcomb & Thomasson's Henderson 1, R. Bennington Survey, Jefferson offshoot, making two-tenths of one percent.

Plug-back well holds chief Lisbon interest

Shreveport.—With 40 active operations under way in the Lisbon field, Claiborne and Lincoln parishes, chief interest last week was centered in J. B. Bond's (Lisbon Oil Company) Burgess 1, SE NE 3-20n-5w, which was being cleaned out preparatory to acidizing at 5300 feet where it logged eight feet of saturation early in the history of the field and was deepened to Travis Peak at 5800 feet, being later plugged back. It is two miles west of production.

J. R. Bevill and associates' Alex Edmonds 1, NE NE 16-20n-5w, three miles southwest of Lisbon production and equidistant northeast of Sugar Creek production, was being standardized, with 2500 feet of oil in the hole. Trading between this well and Lisbon production continues active.

Mid-Continent Petroleum Company and Magnolia Petroleum Company are taking up a block in Jackson Parish recently allowed to lapse by Seaboard Oil Corporation. It centers around Section 31-15n-3w.

Skelly Oil Company, Standard Oil Company of Louisiana, and The Texas Company have been leasing recently in Red River Parish. West of the old Naborton field and in Township 12 north, Ranges 12 and 13 west, Tide Water Associated Oil Company has taken 400 acres of leases.

Wildcat shows

Shreveport. — Prairie River Syndicate's (J. E. Smitherman and associates) Hutchinson 1, SW NW 15-15n-12w, Caddo Parish wildcat, now drilling in lower Marine just below 8800 feet, has given indications of a possible gas-distillate producer, although porosity and resistivity so far have not been sufficient to indicate a commercially profitable well at such a depth.

When electrical tester was run it revealed sand from 8675 to 8703 feet which showed 65 millivolts and 160 ohms and about the same resistivity and porosity in sand from 8715 to 8763 feet. Five feet of sand from 8772 to 8777 feet showed 50 millivolts and 200 ohms.

United Gas Public Service Company and associates last week completed a small wet gasser in the Travis Peak in the Sugar Creek gas field in Brownfield 2, SW NE 5-19n-5w, Claiborne Parish, whose open flow was estimated at 20,000,000 feet, and which gauged 3,750,000 feet through ¼-inch choke. Total depth is 5730 feet. Operators immediately started deepening Brownfield 1 from the Glen Rose gas horizon.

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Extend Cotton Valley Lower Marine production southwest

Shreveport.—The Lower Marine gas-distillate producing area of the Cotton Valley field, Webster Parish, was extended 1½ miles southwest last week when Standard Oil Company of Louisiana and A. G. Oliphant's E. L. Stewart 1, SE SE 32-21n-10w, was completed at 8700 feet, flowing 400 barrels of distillate daily and making 4,500,000 cubic feet of gas through 17/64-inch tubing choke with tubing pressure 2800 pounds and casing pressure, 2950 pounds.

The well was completed after a third perforation with 40 shots from 8612 to 8616 feet following similar perforations from 8594 to 8597 feet, 8598 to 8602 feet, and 8608 to 8611 feet in 7-inch casing that had been cemented at 6881 feet. With elevation of 240 feet this test logged top of the lower Marine at 8031 feet and topped the Bodcaw producing horizon at 8589 feet.

Stanolind Oil & Gas Company last week closed the purchase of 720 acres a mile and a half southeast of production in Cotton Valley, from Pardee Lumber Company (cash consideration $90,000, similar sum from production), with obligation to spud a lower Marine test within 90 days from September 1 and if it is successful to drill four additional tests to the same horizon under similar space periods. The acreage is in Sections 24, 25, and 35-21n-10w, and 2-20n-10w. Several smaller purchases of acreage in this direction from the field have recently been made due to A. G. Oliphant's Sam Banks 1, Section 34-21n-10w, now drilling shale below 6740 feet having checked high, logging anhydrite stringer at 4025 feet and topping massive anhydrite at 4235 to 4465 feet and picking up last anhydrite at 4570 feet; elevation is 196 feet.

Stanolind Oil & Gas Company will not drill its deep test on its 10,200-acre block around the Pine Island shallow field in Townships 20 and 21 north, Ranges 15 and 16 west, Caddo Parish, this year but it will be included in the 1938 program.

Joe Modisett is ready to make location in Sections 13 or 14-21n-1e, Union Parish, in the southeast trend from Schuler, on a large block of acreage that has been shot recently. It will be a 7000-foot test.

NORTH LOUISIANA Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BOSSIER PARISH (Sligo)—		
Ark. La. Gas Co., Tom Wilson 2, 8-17n-11w	¶30	5120
CADDO PARISH (Dixie)—		
R. G. Triplett et al, School Board 3, 16-19n-14w	200	2460
CADDO PARISH (Pine Island)—		
Stanolind O&G Co., Dillon Heirs 124, 14-21n-15w	57	1699
CADDO PARISH (Rodessa)—		
Standard Oil Co. of La., S. G. Zylks 2, 10-23n-16w	1450	5950
Roberts Bros., E. G. Finley 1, 1-23n-16w	160	6050
CLAIBORNE PARISH (Lisbon)—		
Harry Hanbury, Vaughn C-1, 25-21n-5w	1920	5268
Vaughn D-1, 30-21n-4w	805	5310
Olsen Drlg. Co., Patton Est. A-1, 30-21n-4w	1500	5172
CLAIBORNE PARISH (Sugar Creek)—		
United Gas P. S. Co. et al, Brownfield 2, 5-19n-5w	¶4	5730
DE SOTO PARISH—		
A. D. Robinson, W. M. Allison 1, 17-14n-13w	*	3002
LA SALLE PARISH—		
Petroleum Heat & Power Corp., Gahoran 1, 25-10n-1e	5	1516
Placid Oil Co., La. Cent. Lbr. Co. 4, 15-10n-3e	*	1814
LINCOLN PARISH (Lisbon)—		
Lyons, Neely et al, H. W. Patton 1, 6-20n-4w	1180	5312
OUACHITA PARISH (Monroe)—		
J. & H. Oil Co., Frost Lbr. Co. A-7, 36-19n-3e	¶2	2170
SABINE PARISH (Converse)—		
Kirk-Greenway & Deep Rock Oil Co., Whitney Corp. 1, 8-9n-13w	*	8510
UNION PARISH (Monroe)—		
Interstate Nat. Gas Co., W. A. Edwards 1, 2-21n-3e	¶1	2174
Fee 70, 6-21n-4e	¶10	2184
United Gas P. S. Co., Crosett Lbr. Co. 53, 23-21n-4e	¶2	2196
WINN PARISH—		
G. W. Zeigen, La. Cent. Lbr. Co. 1, 11-13n-1e	*	1730

*Failures; †Junked; ¶Million cu. ft. gas.

ARKANSAS Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
MILLER COUNTY (Rodessa)—		
Anding & Byrd, Skipper 1, 11-20-28	395	6075
W. L. McClanahan, Womack 1, 11-20-28	737	6082
Potter Bros., Larry & Vance 1, 11-20-28	735	6082
Roberts Bros. Drilling Co., W. W. Capps 1, 10-20-28	950	6121
OUACHITA COUNTY (Camden)—		
Tide Water Associated & Seaboard Oil Co., S. A. Graves 1, 33-13-18	*	4510
PIKE COUNTY—		
Wallace & Neill, Tilyou 1, 26-8-24	*	610
UNION PARISH (Schuler)—		
Phillips Pet. Co., Marks 1, 18-18-17	665	6010
L. Rosen 1, 18-18-17	215	6069

*Failures; †Junked; ¶Million cu. ft. gas.

ARKANSAS FIELDS

Moving in for 7000-foot test in Columbia County

El Dorado, Ark.—Tide Water Associated Oil Company and Seaboard Oil Corporation last week abandoned one geophysical prospect in Ouachita County, Arkansas, and were moving in rig for another test on another similar prospect in Columbia County, which is unofficially reported to be planned for a possible 7000-foot test.

The test abandoned is Mrs. S. A. Graves 1, NE SE NW 33-13-18, after reaching 4510 feet in the Big Lime; elevation was 189 feet. The test logged top of anhydrite at 3855 feet.

Operators are moving in for C. N. Crumpler 1, NE SW 24-17-19, Columbia County.

Standard Oil Company of Louisiana's McKean 1, SW SW 8-16-22, Columbia County, a geophysical prospect, was drilling red shale at 5355 feet last week. Phillips Petroleum Company's geophysical prospect in Ashley County, Stillions Lumber Company 1, SW NW 18-17-9, was drilling in Big Lime at below 5615 feet; elevation is 85 feet. It logged top of the Big Lime at 5192 feet.

Easton, May, and Murdock's La-Grone 1, NE NE 5-12-16, Hempstead

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County, was drilling Travis Peak red shale at 2690 feet.

Deepening Schuler Wells

Only two tests are actively drilling in the lenticular Schuler field, Union County, both tests being wells that are being deepened to the Big Lime. Edwin M. Jones' Marine Oil Company 1, NW SW SE 17-18-17, was drilling shale below 7330 feet and Lion Oil Refining Company's Edna Morgan A-1, Lot 6, SW 18-18-17, was drilling red shale at 6050 feet.

All Arkansas permits for Rodessa extension

El Dorado.—Five drilling permits authorized last week in Arkansas, all for Miller County, in the Rodessa extension, were as follows: Gordon C. Grasty, A. L. Treadway 1, 330 feet north and east SWc SE NE 10-20-28; F. W. Burford, Mary Ahern 1, center south 20 acres NE SW 10-20-28; A. J. August 1, center south 30 acres of east 70 acres SW 8-20-27; S. B. Davis 1, 660 feet north and 334 feet east SWc SE NE 11-20-28; and R. C. Lacey and A. V. Ripley, J. W. Grogan 1, 330 feet north and west SEc north 40 acres of east half west half fractional section 15-20-28.

Mississippi-Alabama line gets more geophysics

Mobile, Ala.—Around the north flank of the Hatchetigbee anticline where it reaches into Mississippi from southwest Alabama, considerable leasing and geophysical activity is going on. In southwest Wayne County, Mississippi, Gulf Oil Corporation has recently completed gravimeter work and is reported to have leased approximately 30,000 acres in two separate blocks. Phillips Petroleum Company in the same general area has a torsion balance unit working in George County and The Texas Company has a seismograph unit working in Greene County where it has been holding a block for some time. Gulf Oil Corporation has a gravimeter unit working around Laurel in Jones County, as well as in southwest Mississippi, in Adams and nearby counties. In Clarke County, east central Mississippi, a gravimeter unit is working for Sun Oil Company.

Joe Modisett and associates' McCorvey 1, SE SW SW 20-9n-2w, Choctaw County, Alabama, proposed 8000-foot test on the Hatchetigbee anticline, was drilling in Eutaw (Ozan) formation below 3260 feet last week after logging top of this formation high at 2913 feet; elevation is 120 feet. There was no showing at top of the Eutaw but in the Selma chalk between 2500 and 2600 feet there were showings of gas. Modisett plans to set a string of casing when he reaches top of the Tuscaloosa (Woodbine).

Sun Oil Company is reported to have opened negotiations with a firm owning 140,000 acres in Collier County, Florida. In this county on a one-million acre block secured from Clem S. Clarke of Shreveport who took it under option from Barron G. Collier, Gulf Oil Corporation is doing geophysical work. This block extends into Lee and other counties.

SOUTHEASTERN STATES Completions

MISSISSIPPI

Company, Well and Location	Init. Prod. Bbls.	Depth
LAMAR COUNTY—		
Sun Oil Co. et al, Talley 3, 33-4n-15w	*	6588
WILKINSON COUNTY—		
H. L. Carnahan et al, Foster Creek 1, 1-2n-2w	*	5016

*Failures; †Junked; ¶Million cu. ft. gas.

Two Mississippi wildcat tests are abandoned.

Jackson, Miss.—Two wildcat tests in south Mississippi were abandoned last week. Sun Oil Company abandoned Mrs. Kate Talley 3, located 1600 feet south and 1350 feet east NWc 33-4n-15w, Lamar County, 6588 feet on the recently discovered salt dome, the fourth test drilled on this dome. This test logged first anhydrite at 6243 feet and the true anhydrite at 6274 feet; elevation is 388 feet.

In "the trend" in southwest Mississippi, Wilkinson County, H. L. Carnahan and associates' abandoned Foster Creek Lumber Company 1, SW NW 1-2n-2w, at 5016 feet, after electrical tester was run which logged total depth of 5008 feet; elevation is 226 feet. Top of Vicksburg was logged at 3718 feet and the Cockfield which carried water was cored from 4113 to 4129 feet.

South Mississippi Oil Company last week erected derrick for Morris 1, SEc 4-2n-14w, Lamar County, with plans to spud at once. Sun Oil Company recently moved a second torsion balance unit into Lamar County. Ohio Oil Company's seismograph unit working in the Mississippi delta of north Mississippi, is now in Sunflower County.

Phillips Petroleum Company which is reported preparing to make location for its first test on acreage taken from a 250,000-acre block on which geophysical options were taken several months ago in Perry, Marion, and Lamar counties, recently acquired all of Section 16-2n-10w, state school land in Perry County, with a drilling obligation to start a 5000-foot test within a year. Gulf Oil Corporation has leases in this area.

Authorize fifth test on Mississippi dome

Hattiesburg, Miss. — Authorization has been given by Sun Oil Company, Wanette Oil Company et al for the drilling of a fifth test on the Scanlan, or Midway dome, Lamar County, after abandoning Mrs. K. Talley 3, NW 33-4n-15w, in broken salt at 6588 feet. Caprock was entered at 6201 feet and first anhydrite logged at 6232 feet, with an elevation of 388 feet. Location for Talley 4 is 600 feet south of the above failure, and in SE NW 33-4n-15w, and the drilling program calls for a 7500-foot test.

New wildcat test is started in Vacuum area.

* * *

Monument's north rim is widened to west.

Hobbs, N. M.—Two wildcat projects were included in 16 new locations authorized for Lea County the past week. Enlargement of wildcat explorations has been anticipated on the strength of the completion of major drilling programs in the older lime fields.

The Texas Company has announced location for State 1-L, C SW NE 1-18s-34e, situated near the center of the county and about 3¼ miles south of the second oil completion in the Vacuum pool, only producing area in the county without a market outlet.

Value of the Vacuum area as an oil source is an unknown quantity. Two completions about one mile apart are capable of flowing their proration allowable. They are on a broad anticline that extends west by north from the Maljamar field. Magnolia Petroleum Company, owner of the producers, has resumed drilling on State-Bridges 2, C SW SE 14-17s-34e, after cementing 7-inch at 4354 feet. This test is about ½ mile southwest of its discovery. Phillips Petroleum Company's Lea 1, C NW NW 30-17s-34e, about five miles southwest of the above wells, encountered minor oil saturation in lime core at 4676-86 feet, with an elevation of 4108 feet, and is changing to cable tools after cementing 7-inch at 4646 feet. This wildcat is classed as an important test.

North portion of Lea County is receiving another test through the efforts of Joe C. Maxwell, R. Crandall, and C. H. Osmond on the Maxwell permit, C SE SE 2-11s-36e, about one mile east

NEW MEXICO Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
LEA COUNTY (Eunice)—		
Cities Service, Closson 5, c nw ne 6-22s-36e	350	3849
Gulf, J. H. Day 2, c se nw 6-22s-36e	120	3840
Ohio Oil, State-McDonald 8, c sw sw 16-22s-36e	1500	3850
LEA COUNTY (Mattix)—		
Cities Service-Atlantic Ref., O. M. Hodges 1, ne ne ne 8-24s-37e	300	3575
LEA COUNTY (Monument)—		
Gulf, State-Graham 1-H, c nw sw 13-20s-36e	375	3885
State-Kutter 1-D, c sw sw 8-19s-37e	1200	4040
Ohio Oil, McGrail 3, c se ne 27-19s-36e	120	4050
Skelly, Van Etten 7, sw ne se 9-20s-37e	2500	3884
Van Etten 8, c w½ se se 9-20s-37e	2000	3874
The Texas Co., B. M. Keohane 1-B, c nw ne 18-19s-37e	1500	4025
State 5-C, c ne ne 19-20s-37e	750	3865

*Failures; †Junked; ¶Million cu. ft. gas.

of Ranger Lake. Majors are supporting this geophysical prospect.

Pipe Line Curtail

Curtailment of crude runs by pipe lines serving Lea County fields resulted in the allowable for the state being reduced from 114,000 barrels to 111,000 barrels effective September 1. This cut, plus the addition of new wells, caused a sharp reduction in the individual well allowable.

Monument Widened

Production of the north rim of the Monument field was widened to the west through the completion of The Texas Company's Keohane 1-B, C NW NE 18-19s-37e, flowing 360 barrels oil in eight hours after using 2000 gallons of acid in lime at 3890-4025 feet. Gas-oil ratio was 1311 feet per barrel. This company's State 5-C, C NE NE 19-20s-37e, located on south rim of Monument, flowed 247 barrels initial on ¾-inch choke after using 4000 gallons of acid at 3740-3865 feet.

Five new tests were allotted the field. Gulf Oil Corporation has started operations on State-Graham 2-H, C SW SW 13-20s-36e, and Kyte 1, C SE SE 7-19s-37e. The latter offsets the northernmost producer. Amerada Petroleum Corporation has resumed drilling after being idle for more than a month, with work underway on State 2-G, C NW SW 18-19s-37e. Shell Petroleum Corporation's State 4-EN, C SW NW 13-20s-36e, is a new project. Great Western Producers, Inc.'s Bordages 1, NW NW NW 33-19s-37e, is drilling below surface pipe.

Stanolind gets 95-barrel well in Tri-State Basin

Rock Springs, Wyo.—One well was completed in the Tri-State Basin area this week. Stanolind Oil & Gas Company's Iles 16-X, SE NW NW 23-4n-92w, Iles Dome field, Moffat County, northwestern Colorado, made 95 barrels daily from 3451 feet in the Basal Sundance formation after deepening from 3443 feet in the same formation.

Recovers lost core barrel

Laramie, Wyo. — Sinclair - Wyoming Oil Company has recovered lost core barrel in Muskrat 2-C, NE SW SW 1-33n-20w, deep test well in the Muskrat field, Fremont County, west central Wyoming, and is drilling at 7910 feet, still in Amsden lime. Well found water in the Tensleep sand and is headed for the Madison lime.

Test has 8000-foot objective

Cody, Wyo.—In the deep Badger Basin field, Park County, northwestern Wyoming, Resolute Oil Company's Government 1, C NE NE 20-57n-101w, the most advanced drilling well in the field, is making hole at 7380 feet, headed for the Frontier horizon at around 8000 feet.

T. S. JONES, formerly of the Tulsa branch of Crane Company, Chicago, Ill., has been transferred to the oil sales department as field representative covering Kansas, Oklahoma, and the Panhandle of Texas.

ROCKY MOUNTAIN FIELDS

Minnelusa sand area of Lance Creek extended

Casper, Wyo.—Development of good oil shows in Minnelusa sands in the northeastern sector of Lance Creek field, Niobrara County, Wyoming, indicates extension of the deep pool for a considerable distance in that direction. Argo Oil Corporation's Ford 4, SW SE 33-36n-65w, made 10 barrels of oil an hour on test in the upper sections of the sand at 5331-65 feet and is coring ahead.

Two After Deep Sand

Two more wells in the field, disappointing in Basal Sundance formations, are reported ready to drill ahead to the Minnelusa. Both are being drilled by Continental Oil Company. Schuricht 5-B, C SW SW 5-35n-65w, on the west side of the field, logged the Basal Sundance at 4004-70 feet this week with no commercial oil or gas shows, and is drilling ahead at 4474 feet; Otto Rohlff 8, SE SE 31-36n-65w, is coring in the Basal Sundance sand at 4015 feet. A test of the formation at 4010 feet showed 2 barrels of fluid, one-third water, per hour. If no improvement is seen in the shows deeper in the Sundance, the test will continue on down to the Minnelusa.

A deep well in the Lance Creek area, Continental Oil Company's Tom Bell 10, C SW NW 34-36n-65w, is coring ahead at 5840 feet in Minnelusa, topped at 5283 feet. The well tested 12 barrels an hour from the deep sand.

Ohio Oil Company's Lamb 10, Account 2, NE SE 5-35n-65w, Lance Creek, topped saturation in the deep Minnelusa at 5405 feet this week and is shut down at 5423 feet waiting on 7-inch casing which will be run to the top of the saturated section.

On the East Lance Creek high, 4 miles east of the field, Niobrara County, Continental Oil Company's Leach 1, SW NE NE 29-36n-64w, encountered further circulation difficulties and was held up below 2900 feet this week.

MOUNTAIN STATES Completions

MONTANA

Company, Well and Location	Init. Prod. Bbls.	Depth
GLACIER COUNTY (Cut Bank Field)—		
Santa Rita Oil & Gas, Government 2 078744, cse sw 4-32n-5w	162	3078
Glacier Production Co., Long 1, nw ne nw 22-32n-5w	*	2758
Montana Headlight Oil Co., Yunck 7, sec nw nw 1-34n-6w	60	2795
Yunck 8, nw sw nw 1-34n-6w	76	2798
TOOLE COUNTY (Kevin-Sunburst Field)—		
R. E. Dockery's Gunderson 1, sw nw 19-35n-2w	30	1557
Anaconda-Kevin Oil Co., Government Permit 052905, nw se ne 19-35n-2w	10	1515
Donovan & Fauque, Government 8 052-36-D, se se se 8-35n-2w	*	1625
Big West Oil Co., Jackson 1, csw ne 30-35n-3w	*	1890
Consolidated Gas Co., Hugi 1, ne ne nw 14-35n-3w	*	1743

*Failures; †Junked; ¶Million cu. ft. gas.

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EASTERN FIELDS

Clay City field in Illinois extended two miles.

* * *

Mechanical trouble blocks Richland County wildcat.

* * *

Three important Pennsylvania strikes are recorded.

Pittsburgh.—Clay City field in the Illinois Coal Basin area was extended 2 miles southward last week when Duncan Oil Company's Carroll 1, NE NE SE Section 8, Township 2n-8e, flowed 1850 barrels the first 24 hours. Production is from the McCloskey sand.

Within 24 hours after the well's initial production was known, Pure Oil Company, pioneer in this area announced locations for 3 offsets east and west of the outpost. Drilling on one of the wells was to start this week.

Robinson & Gordon, to whom the lease on the 40 acres on which is located the Carroll 1 was sold by Walter Duncan before drilling started, are rigging up for No. 2, while Duncan will start a test immediately on 80 acres to the north.

Adams Stakes 100 Locations

Indicative of the boom operations being carried on in the Illinois basin area is the confirmed report that Adams Oil & Gas Company, pioneers in the Patoka field of Marion County, have staked approximately 100 new locations in that area for future development. The company has 21 producing wells on its Patoka field holdings, with 3 others scheduled for completion within a few days.

The Richland County test of R. H. Neely et al on the Rolla Baughman tract, SE SE NE Section 22, Township 3n-10e, Olney Township, was abandoned at 2914 feet when the crew was unable to dislodge the reamer. The rig is being skidded 50 feet north for a new test. Located south of Olney, the test is expected to prove a wide area.

Three Pennsylvania Hits

Niagara Oil Company made history in the Pennsylvania Grade Crude Oil region with the first gusher in 15 years on its Sliverville lease, 9 miles south of Bradford, which had initial production of 240 barrels an hour. Production, which has since dropped to 350 barrels a day, is from a pocket in the Bradford second sand. The well is on the outskirts of the present producing field in the Bradford district, and there are many wells to the north and west of the strike, but only a few to the south. It has been shut in, preparatory to drilling deeper.

J. R. Orndorf brought in Mattie I. Scott 2, Center District, Greene County, flowing 30 barrels an hour from the Ninevah Thirty-Foot sand, topped at 3187 feet, for the second outstanding Pennsylvania Grade region development of the week.

The third and most recent Pennsylvania strike was completion of a 100-barrel well by George L. Yaste on United Presbyterian Orphanage property near Valencia in Butler County. The event probably indicates revival of activity in Marrs-Butler field, abandoned 40 years ago. Yaste holds 2400 acres in the region and will start two tests soon.

Importance of the three strikes to normal development in the Pennsylvania Grade region is indicated by comparison with completion of 1613 producing wells with combined initial production of 5037 barrels daily, or 3 barrels per well, during the first 6 months of this year.

EASTERN FIELDS

Completions

OHIO

Company, Well, Location	Init. Prod. Bbls.	Depth
ALLEN COUNTY—		
Davis, Jones & Co., W. T. Agerter 1	5	1260
ATHENS COUNTY—		
Barrows Oil Co., Phoebe Barrows 2	¶.30	1001
Williams Bros., Iva L. Morrison 2	¶.10	1047
BELMONT COUNTY—		
Home Utility Co., J. E. Grimes 9..	*	1376
GUERNSEY COUNTY—		
Ohio Fuel Gas Co., State of Ohio 1	¶.03	1500
Roy Hammond, Alfaretta Meredith 1	*	1312
KNOX COUNTY—		
Pure Oil Co., D. M. Miller 1.....	215	3195
LICKING COUNTY—		
Hope Construction & Refining Co., Delphia Smith 3	15	637
Settles, Shannon et al, P. F. Shannon 1	8	759
Park National Bank of Newark, Arlie M. & Geo. A. Ashelman 2.....	2	688
LORAIN COUNTY—		
William Dempsey, Charles Werseh 1	*	2460
MEDINA COUNTY—		
Oko Oil & Gas Co., Jessie McVicker 51	2	460
MEIGS COUNTY—		
Ohio Fuel Gas Co., A. B. McGhee 3	*	....
Meigs Development Co., Harry C. Fisher 1	*	2085
NOBLE COUNTY—		
Metcalf et al, Catherine Young 1..	2	1086
C. W. Rich et al, Susannah Steel 1	¶.20	1484
PERRY COUNTY—		
Allegheny Oil Co., Mary Monahan 10	5	1121
Ohio Fuel Gas Co., Sunday Creek Coal Co. 151	¶.15	3575
PUTNAM COUNTY—		
Ellarmfro Oil & Gas Co., W. P. Gierhart 3	50	1392
STARK COUNTY—		
Chamberlin & Gardiner, Charles E. Dillon 1	¶.70	778
WAYNE COUNTY—		
Preston Oil Co., C. Sykes 1.....	70	3291
Ohio Fuel Gas Co., Lester E. Cady 1	*	3048

WEST VIRGINIA

CALHOUN COUNTY—		
Richter Oil Co., Mary J. Kelley 7..	5	1864
Clem S. Morris, Phillip Nichols Heirs 2	*	2500
DODDRIDGE COUNTY—		
L. G. Pigott, Homer Drane 1.....	¶.10	2520
GILMER COUNTY—		
Chartiers Oil Co., Daniel Huffman 14	¶.25	3615
JACKSON COUNTY—		
Mountain Iron & Supply Co., J. W. Kelley et al 7	2	1578
KANAWHA COUNTY—		
Godfrey L. Cabot, Inc., Holmes Morton et al 1	¶4.90	5152
LINCOLN COUNTY—		
United Fuel Gas Co., Jennie Jones 4740	¶2.50	3250
RITCHIE COUNTY—		
McBurney et al, M. B. Nutter 5..	¶.32	2105
W. H. Mossor, Blackburn Hayhurst 1	*	2086
ROANE COUNTY—		
South Penn Oil Co., J. W. Conley 14	5	2608
WAYNE COUNTY—		
Huntington Oklahoma Gas Co., C. C. Preece 1	¶.08	3018
WETZEL COUNTY—		
Manufacturers Light & Heat Co., Geo. & Mary Foland 2.....	¶.85	2223
WIRT COUNTY—		
W. C. Patterson, Camden 27.....	*	1505
WOOD COUNTY—		
South Penn Oil Co., Nora J. Rolston 27	2	1295

KENTUCKY

BUTLER COUNTY—		
A. H. Collins & D. C. Downey, Zella Woodall 3	10	756
DAVIESS COUNTY—		
Daugherty & Ellis, Clarence Leet 2..	*	1175
HANCOCK COUNTY—		
W. E. Hupp et al, J. Easton 3.....	50	....
Kentucky Natural Gas Co., J. C. Adams 2	*	725
LEE COUNTY—		
Oakes & Crabtree, Andrew Combs 3.	175	....
Thomas Whitmer, J. C. White 3....	10	....
OHIO COUNTY—		
Kentucky Natural Gas Co., R. P. Cox 3	¶1.66	1130
Porter Evans, W. Claude Schultz 1	¶.19	525
W. W. Damron, O. M. Coleman 1..	*	1130
A. Teller et al, A. S. Edge 2.....	*	658
Bondell et al, Alonzo Crow 1.....	*	455
WOLFE COUNTY—		
James Brown, Booth Heirs 1.....	2	1300

ILLINOIS

CLINTON COUNTY—		
Pure Oil Co., Weiler 3	185	2980
MARION COUNTY—		
Adams Oil & Gas Co., Oscar Hill 1	*	1702
Brown et al, Bachman 1	*	1707
RANDOLPH COUNTY—		
Hood & Cain, Burns 1	*	1004
CLAY COUNTY—		
Pure Oil Company, E. Weiler 3....	185	2980
Oscar Poppe 2	1275	2977
Elizabeth Chafin 1	1440	2977
Wiser Oil Co., Damon Smith 2....	1300	2990
MARIO NCOUNTY—		
Adams Oil & Gas Co., Howell 2..	165	1411
Harry Hudspeth 1	135	1450
Glenn Merryman 8	130	1431
Geo. Wasem 2	45	1436
J. A. Rogier 1	*	1600
RICHLAND COUNTY—		
Pure Oil Co., Frank Walters 1....	1000	9260

PENNSYLVANIA

GREENE COUNTY—		
J. B. Orndoff, Mattie I. Scott 2..	720	3217
Equitable Gas Co., B. F. Thralls 1	¶2.85	2505
Manufacturers Light & Heat Co., C. C. Wood 1	¶.05	3070
WASHINGTON COUNTY—		
Dunmar Oil & Gas Co., J. T. Baldwin 3	75	3030
BEAVER COUNTY—		
John T. Galey et al, Minnie Weigle 1	¶1.5	4824
GREENE COUNTY—		
South Penn Oil Co., Samuel Harvey 11	50	3224
Null et al, W. P. Hoskinson 3.....	¶.14	1925

*Failures; †Junked; ¶Million cu. ft. gas.

MICHIGAN FIELDS

Buckeye extension attempt to complete with acid

Mount Pleasant.—Harold J. Hand's Smart 1, attempting a 6-mile southeast extension of Buckeye production and now standing with 1600 feet of oil in the hole, will set 3-inch tubing and receive a 1000-gallon dose of acid in completing. Dundee lime was topped at 3414 feet, with the pay logged in that formation at 3490-93 feet. Smart 1 is in Section 29-17n-2e, Bentley Township, Gladwin County.

As this test caused new interest in the Gladwin play, operations in the proven Buckeye field may be slowed up with a new 75-barrel per well flat allowable which went into effect September 1. The new schedule is a 50 percent cut and the stiffest in Michigan history.

O. H. White, umpire for the Buckeye proration committee, estimated the pool's present potential in "excess of 100,000 barrels," and placed the "working pipe line take at 21,000 barrels."

Along with cutting the allowable, the committee set in motion a plan whereby pipe line companies in the field will equalize their conections and, in theory, equalize take. The per well take by different companies has varied from 60 to 300 barrels per day.

Gladwin County continues to lead Michigan in field activities, recording during the week 14 oil producers out of the 27 completions recorded by the state.

Mount Pleasant, Mich.—A Senate bill passed in the last legislature commonly referred to as the Blake Gas Act, becomes effective October 29, and is expected to go far in improving the natural gas industry of the state in so far as state jurisdiction is concerned.

The new act will shift from the Public Utilities Commission to the Conservation Commission most of the key powers. However, certain exceptions which were written into the bill already have led to different interpretations of the act, and the attorney general is almost certain to be asked for an official opinion.

MICHIGAN

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ALLEGAN COUNTY—		
Salem Gas & Oil Co., Raab 2, sw sw nw 16-4n-13w	400	1569
Hubel Oil Co., Madalinski 1, ne ne sw 18-1n-13w	10	1382
ARENAC COUNTY—		
Charles Weller, Crandall 2, se sw ne 10-20n-4e	100	2611
CASS COUNTY—		
L. T. Barber, Beebe 1, sw ne ne 3-5s-15w	*	1850
GLADWIN COUNTY—		
Roy W. Clovis, Cingano 2, nw se ne 36-17n-2w	30	3860
Gordon Oil Co., Ashley 2, sw sw sw 4-17n-1e	20	3600
State A4, ne sw ne 36-18n-1w	390	3585
Wicklund Dev. Co., State G1, sw se se 2-18n-1w	75	3650
State E2, se nw sw 12-18n-1w	140	3626
Rowmor Corp., Manyet 1, sw nw se 3-18n-1w	250	3655
Sun, Baum 2, sw nw sw 3-18n-1w	240	3676
Socony Vacuum, Dalley 4, ne se nw 12-18n-1w	50	3647
Charles H. Bell, McMahon 1, ne nw sw 25-18n-1w	100	3600
Bell & Mark, Lincoln Life 3, sw ne se 35-18n-1w	800	3595
Clark & Johnson, McMahon 8, se ne sw 36-18n-1w	300	3584
Rex Oil Co., Hall 3, sw ne ne 35-18n-1w	300	3605
Mammoth Pro. & Ref., State D2, ne se ne 14-18n-1w	2000	3630
State D3, sw se ne 14-18n-1w	75	3640
GRATIOT COUNTY—		
Bila Oil Co., Ryan 1, sw sw se 32-10n-1w	*	960
ISABELLA COUNTY—		
Pure Oil, Embrey 6, ne ne ne 4-14n-6w	340	3624
MIDLAND COUNTY—		
T. F. Caldwell, Inc., Kriegel 1, sw sw ne 36-15n-1w	*	3973
MUSKEGON COUNTY—		
W. Mich. Consumer, Young 1, c se 4-9n-14w	¶¼	1300
OGEMAW COUNTY—		
M. J. Ingold, Quackenbush 2, se nw sw 13-22n-1e	35	2885
Ross & Bernier, Ellis 1, ne se ne 23-22n-1e	50	2489
Ogo Oil Co., Husted 2, ne se nw 36-22n-2e	60	2614
Richland Oil Co., Husted 4, ne nw se 36-22n-2e	70	2592
Smith Pet. Co., Ellis 4, ne se se 14-22n-1e	60	2840

*Failures; †Junked; ¶Million cu. ft. gas.

To shoot out burning well at Houston show

Houston.—Plans for a demonstration of shooting out a gas fire at the Oil-World Exposition, to be held in Houston, Texas, October 11 to 16, inclusive, are now being made. While this demonstration will be spectacular, it is aimed to make it highly instructive, and by portraying the hazards of well fires, bring home to operators the vital necessity of use of all safety equipment in drilling operations.

The work of extinguishing the fire will be under the supervision of M. M. Kinley, who will consult with the exposition management regarding preparations necessary to make the fire as nearly identical to field conditions as possible. High-pressure gas will be piped to the site, later to be selected, and wooden derricks placed in readiness for erection before demonstrations. The shooting will be done with gelatin in the manner used by Kinley in extinguishing well fires all over the world.

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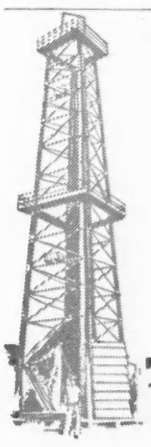

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CALIFORNIA FIELDS

Several Kettleman north dome wells may deepen.

* * *

Old well gets shallow production at Palos Verdes.

Los Angeles. — Although Kettleman North Dome Association's No. 4-18J passed out of oil sand at 10,861 feet and is drilling in barren sand at 10,975 feet, it is expected that a number of companies on the north dome will deepen currently producing wells to the new sand below 10,000 feet in view of an indicated production of 1000 barrels per day from the above well.

None of the producers have started for the new sand yet. Apparently they wait to see whether No. 4-18J will find a more prolific sand below 10,975 feet or whether the indicated production of 1000 barrels per day will materialize if the well is completed in the sand bottomed at 10,861 feet.

In most instances holes on the north dome of Kettleman Hills are in condition for deepening. Eighteen or 20-inch casing generally is run to 1100 or 1200 feet and is followed by a rather large string set just above the regular zone, a situation rendering the setting of an additional string around 10,000 feet a simple matter.

17,000 Proven Acres

There are slightly better than 17,000 proven acres on the north dome, and the new deep zone should underlie a large part of it. There are 165 wells on production in this field, and there are 45 shut in wells which could be produced. The field is given an estimated potential of 150,000 barrels, and the daily average production is about 80,000 barrels.

Bandini Petroleum Company, a subsidiary of Wilshire Oil Company, recently leased 120 acres in the Whepley tract, formerly held by Tide Water Associated Oil Company, and will deepen Whepley 5, bottomed at 8387 feet, and placed on production in June, 1935, for 37 barrels of oil and 330 barrels of water. The land secured by Bandini is the east half of NE SE 35-21-17. The Tide Water Associated retained 40 acres out of 160 originally held. This tract is not far from the deep test now drilling, and it is likely a well will be started when No. 4-18J has stopped drilling.

Shallow Oil at Palos Verdes

Interest has been aroused in the Palos Verdes Hills area in Los Angeles County, where McClaren Brothers' No. 1, 1550 north and 990 feet east from southwest corner of Section 27-4-14, is pumping 40 barrels of 13 gravity oil, cutting 25 percent water and mud, from 1870 feet. Sixteen years ago the well was drilled to 3970 feet by another operator. It had been idle for years until the new concern took it over and plugged back for a test.

The larger part of the Palos Verdes Hills area is in large tracts, but there are two townlot areas within striking distance of the well.

In the Grapevine area of Kern County, which has been the scene of a lot of largely futile drilling in recent years, Reserve Oil & Gas Company's No. 33-4, Section 33-11-19, plugged to 4610 feet and tested considerable water. It is understood the company probably will start another hole one location west of No. 4. Ohio Oil Company's Title Insurance 1, Section 21-11-19, drilled to 9625 feet, is plugging back and testing by stages.

Joint Semitropic Wildcat

Four oil companies holding large acreage in the Semitropic Ridge area in Kern County have joined forces to drill a wildcat 313 feet north and 2306 feet west from the southeast corner of Section 14-27-23, to be known as Randolph Community 1. The companies involved are Fullerton Oil Company, Continental Oil Company, Standard Oil Company of California and Superior Oil Company. Standard will do the drilling.

On the middle dome, Kettleman Hills, Temblor Oil Company's Bunting 1, Section 25-23-18, is coring at 7950 feet in brown shale, showing some oil and gas. Temblor formation is the objective. This is the only drilling well in the middle dome.

Lawndale Disappointing

Little luck is had by those trying to pick up a deep oil sand in the old Lawndale field in Los Angeles County. A. A. Douglas probably will abandon Peck 9, which was deepened to 7350 feet, and later plugged to 7250 feet, where swabbing was continued for 30 hours, with the fluid level remaining at 6000 feet. Young & Bryan's Peck 1, deepened to 7246 feet, on production test made several short flows of oil and then turned to water. An attempt is being made to locate the water. String of 4¾ inch casing had been landed at 6850 feet.

Tests attempting to produce from the seventh oil zone at Rosecrans in Los Angeles are making rather slow progress. Bolsa Chica Oil Company's Exeter 3, depth 7946 feet, plugged to 7190 feet and during swabbing operations made several short flows of 42 gravity oil. A. N. Macrate's Gray 2 is coring shale and oil sand at 7524 feet. The seventh zone was topped at 7295 feet. Universal Consolidated Oil Company's Trust 1, depth 7580 feet, with plug at 7546 feet is flowing by heads 140 barrels of 33 gravity clean oil. The flow is through 20/64-inch choke with 200 pounds on the tubing and 1300 pounds on the casing. The casing was perforated from 7185 to 7250 feet and from 7280 to 7375 feet.

Permits Granted Slowly

Completions at Wilmington since January 1 average close to one producer a day, without a junked or dry hole. Drilling has not started in the town lot area of Long Beach, joining the Wilmington field and partially proved. City officials of Long Beach are proceeding slowly in arranging for drilling obligations, etc. Several companies have obtained leases, prepared maps and spotted tentative locations, preparatory to fast development when decks are cleared for action. Union Pacific Railway Company will be forced to do considerable offset drilling in the new area.

The test being drilled by Royalty Service Corporation, known as Gilmore 842-2, with bottom at about 5750 feet, is preparing to make a production test. The deep sand penetrated is known as the Ford sand, since it was first picked by General Petroleum Corporation on the Ford Motor Company land.

The new Northwest Long Beach field, northwest from the old field, has one drilling well, one well on production and another due to start. Hilldon Oil Company's Ameb Co. 1, depth 4038 feet, is producing 600 barrels of 24.2 gravity oil. The same company's No. 2 is drilling at 1860 feet in sandy shale, and Union Oil Company's Oil Operators 1, is driving piling. It is understood that Union may drill several holes.

CALIFORNIA Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
KETTLEMAN HILLS—		
Standard, No. 33J-41	1200	8225
FRUITVALE—		
Western Gulf, Red Ribbon 7	705	3359
Southwestern Dev. Co., K.C.L. 1	*	4060
KERN FRONT—		
Ted Martin, Trustee, Sesnon 1	80	2916
ELK HILLS—		
Richfield, Crampton H-8-A	125	3019
LOST HILLS—		
Tide Water Associated, Williamson 9-R	150	1634
MIDWAY-SUNSET—		
Quality Oil Co., No. W.P. 1-A	190	2172
Texas Co., No. 23	325	3004
ROUND MOUNTAIN—		
Honolulu Oil Corp., No. 22	400	1825
Shell Oil Co., Caldwell 18	450	1970
RIO VISTA—		
Amerada Pet. Corp., Neil Hamilton 1	¶40	4450
RINCON—		
C. C. M. Oil Co., Hobson B-15	200	4600
TEN SECTION AREA—		
Shell Oil Co., Canal 21-14	*	8613
SAN EMIDIO AREA—		
Union Oil Co., Morrison 1	*	2075
KERN COUNTY—		
Pebble Beach Oil Co., Olcese 1	*	1703
EAST COYOTE		
M. A. Cox, Arrows 1	*	5445
WILMINGTON—		
Bankline Oil Corp., P. T. C. 6	130	3394
Burnoel Pet. Corp., 586-B-1	180	3480
Union Pacific Ry. Co., Offset 36	100	3442
Offset 39	355	3587
Offset 45	520	3079
No. C-3	220	3427
V. R. G. Wilbur's Santa Fe 1	200	3680
Wilton Oil Co., Wilmington 1	200	3700

*Failures; †Junked; ¶Million cu. ft. gas.

IMPORTANT WILDCAT TESTS

ARKANSAS

ASHLEY COUNTY — Phillips Pet. Co.'s Stillions Lbr. Co. 1, s½ sw nw 18-17-9, top Big Lime 5192 ft, dr 5450 ft, lime.

CROSS COUNTY — Manning & Martin, Inc.'s Park-Gieseck 1, nwc ne ne 4-6n-5e, dr 2260 ft, shale.

CLEVELAND COUNTY—J. R. Lockhart's Hernsberger 1, se ne 16-11-13, dk. Robertson 1, se ne 36-10-11, co td 3536 ft.

COLUMBIA COUNTY—Robt. Keen's Runyon 1, se ne 1-16-21, dr 1300 ft. Standard of La.'s McKean 1, c sw sw 8-16-22, elev 257 ft, top Travis Peak 4301 ft, dr 5335 ft.

CRITTENDEN COUNTY — Stanley Oil Corp.'s D'Anna 1, 18-8-9, claim so 1366-87 ft, arr make ds test, td 1387 ft.

DREW COUNTY—Sloan Wells et al's Hardy 1, se nw 3-14-7, rur.

HEMPSTEAD COUNTY—Easton, May & Murdock's LaGrone 1, ne ne 5-12-16, top anhydrite 1534 ft, top Travis Peak 2164 ft, dr 2673 ft, red shale (Travis Peak).

LONOKE COUNTY—Frank Silver's Chambers Est. 2, ne nw 17-2-7, 7-in csg 1489 ft, tested sw sd 1500 ft. Al Demurs' High 1, ne sw 25-1n-9w, sd 512 ft. Jas E. Russell's Gunter 1, 17-5-10, dk.

MADISON COUNTY—J. E. & Jno. Hardy's Hamlin 1, sw nw se 8-16n-26w, mim.

NEVADA COUNTY—W. E. Lokey, Tr.'s Purifoy 1, ne ne 17-11-20, top red beds 1430 ft, sd 1630 ft. Union Drlg. Co.'s R. W. Fuller 1, ne se 6-13-21, spd woc surf csg.

OUACHITA COUNTY — Copenhaver Oil Corp.'s J. E. Evans 1, 20-11-19, co td 1730 ft. Tide Water Associated & Seaboard's S. A. Graves 1, ne se nw 33-13-18, elev 189 ft, top anhydrite 3855 ft, dry abn, td 4510 ft.

PIKE COUNTY—Beckwith et al's Hendricks 1, c nw se 16-8s-25w, sd 312 ft. Wallace & Neill's Tilyou 1, se se 26-8s-24w, dry abn 610 ft, boulders.

SALINE COUNTY—Duncan & Givens' Williams 1, nw ne 18-3-15, sd 104 ft.

UNION COUNTY — W. D. Wingfield's Southern Kraft 1, sw ne 18-16-14, elev 124 ft, dr 4755 ft. I. J. Langley's K. K. Langley 1, nw se ne 1-19-18, lcn. E. M. Jones' Marine Oil Co. 1, 17-18-17, elev 238 ft, dr 7280 ft, shale. Lion O. R. Co.'s Morgan A-1, 18-18-17, elev 228 ft, dr 5952 ft, red shale.

CALIFORNIA

KERN COUNTY

MIDWAY SUNSET—American Empire Oil Co.'s No. 1, 20-31-24, rig.

LERDO—Arkelo Pet. Co.'s Arkelo 41, 23-28-26, td 10,056 ft, redr at 7675 ft.

BENA—Bacal Oil Corp.'s No. 1, 5-30-30, sd 1790 ft. Cajalco Pet. Co.'s Brown-Pallette 1, 9-30-30, sd 3570 ft.

McKITTRICK—Birch Ranch Oil Co.'s Lovitt 1, 10-30-21, dr brown shale 2050 ft.

WASCO—Continental Oil Co.'s K.C.L. A-2, 8-27-24, dr hard shale 10,200 ft. Seaboard Oil-Tide Water Associated's K.C.L. 1-C, 26-27-24, sd 10,213 ft.

DEVIL'S DEN—Den Pet. Co.'s Bates 1, 20-25-19, dr sandy shale 4597 ft. Geo. Goodrum's Baron 1-A, 24-25-18, sd 125 ft. Lube Oil Co.'s Gordon 1, 2-25-18, sd 4280 ft.

ROSEDALE—Continental Oil Co.'s K.C.L. B-1, 12-29-26, td 10,205 ft, redr at 5275 ft.

ROUND MOUNTAIN—Fremont Oil Co.'s Olcese 1, 26-28-29, sd 2820 ft. Rudolph Pageman's No. 1, 10-28-29, rig. Pebble Beach Oil Co.'s Olcese 1, 16-28-29, td 1703 ft, plug 415 ft, abn; Olcese 2, 9-28-29, lcn. Tampico Pet. Co.'s Bass-Goodnight K-3, 17-28-29, lcn. J. J. Tavis' Olcese-Tavis 1, 4-29-29, dr silty shale 3110 ft.

ARVIN—General Pet. Corp.'s Houchin 1, 27-31-29, dr sandy shale 4170 ft.

BELRIDGE—General Pet. Corp.'s St. Helens 1, 12-28-20, bldg rig.

NO. KERN RIVER—Hub Oil Co.'s No. 1, 8-28-28, sd 3320 ft, to drop from report.

GRAPEVINE—Ohio Oil Co.'s T. J. & T D-1, 21-11-19, td 9625 ft, plug 5972 ft, swabbing gassy mud. Reserve Oil & Gas Co.'s Tejon 33-2, 33-11-19, td 4505 ft, redr to 4476 ft, sd; Tejon 4, 33-11-19, td 5444 ft, ran perforated, swabbing water.

KERN FRONT — Pacific Oil & Gas Dev. Co.'s Davidson 1, 36-27-27, rur.

ABBREVIATIONS

The following abbreviations, signs, etc., are used in completions and wildcat reports in THE OIL WEEKLY.

*—*dry hole abandoned well.*
‡—*salt water (completions).*
†—*junked and abandoned.*
¶—*million feet of gas.*
abd—*abandoned.*
bbls—*barrels.*
br—*building rig.*
b.s.—*basic sediment.*
csg—*casing.*
co—*cleaning out.*
dd—*drilling deeper.*
dk—*derrick.*
dr—*drilling.*
fsg—*fishing.*
ft—*feet.*
hfw—*hole full of water.*
in—*inches.*
lcn—*location.*
m—*milling.*
mim—*moving in materials.*
mit—*moving in tools.*
mot—*milling on tools.*
n, s, e, w—*north, south, east, west.*
oih—*oil in hole.*
owdd—*old well drilling deeper.*
owpb—*old well plugging back.*
pb—*plugged back or plugging back.*
r—*reaming.*
rog—*rig on the ground.*
rur—*rigging up rotary tools.*
rust—*rigging up standard tools.*
sd—*shut down.*
sdtr—*sidetracking.*
sg—*show gas.*
si—*shut in.*
so—*show oil.*
so&g—*show oil and gas.*
spd—*spudding.*
sr—*straight reaming.*
sw—*salt water.*
td—*total depth.*
ur—*underreaming.*
wih—*water in the hole.*
wo—*workover.*
wocs—*waiting on cement to set.*
wosr—*waiting on standard rig.*

ELK HILLS—Richfield Oil Corp.'s Vista 1-A, 7-31-25, dr shale 3175 ft.

MOUNTAIN VIEW—Section Six Oil Co.'s Johnston 1, 6-31-29, dr shale 2620 ft. Union Oil Co.-Standard's Barubetz 1, 1-30-28, lcn.

FRUITVALE—Shell Oil Co.'s Bellevue A-36-31, 31-29-27, dr sandy shale 8780 ft. Southwestern Dev. Co.'s K.C.L. 1, 15-29-27, td 4060 ft, in gray sand, ran formation tester, recovered mud, abn.

TEN SECTION—Shell Oil Co.'s Canal 21-14, 14-30-25, td 8613 ft, plug 8232 ft, abn.

KERN RIVER—Sleeper Ridge Oil Corp.'s No. 1, 15-29-28, sd 50 ft. Well Developers Inc.'s No. 1, 16-28-28, rur.

SEMI TROPIC—Standard's Randolph Com. 1, 14-27-23, joint test Fullerton Oil, Standard and Continental, grading.

McGUNDEN—Standard's Routzong 1, 2-30-28, lcn.

GREELEY—Superior Oil Co.'s K.C.L. 9, 3-30-26, rur.

SO. MARICOPA—Texas Co.'s Pioneer 1, 33-11-23, rur.

MOUNT POSO—Trico Oil & Gas Co.'s Allen 1, 20-26-28, lcn.

RIO BRAVO—Union Oil Co.'s Kernco 1-34, 34-28-25, td 10,383 ft, top oil sand 10,366 ft, co to run formation tester.

SAN EMIDIO—Union Oil Co.'s Morrison 1, 31-11-22, td 2075 ft, plug 765 ft, abn.

MISCELLANEOUS

HUMBOLDT COUNTY—Texas Co.'s Eureka 2, 22-3-1, td 7708 ft, plug 6473 ft, fsh tubing.

KINGS COUNTY—Ray Bisconer's No. 2, 11-24-20, sd 1650 ft. Central Calif. Utilities Corp.'s Kettleman-Lakeview 3, 11-23-19, td 1202 ft, plug 1190 ft, sd. Dudley Ridge Dev. Co.'s No. 2, 24-23-20, dr shale 3604 ft. Kettleman View Oil & Gas Co.'s No. 1, 9-22-19, sd 4787 ft. Glen C. Stone's Teeter 1, 25-20-20, sd 1315 ft. Tri-Counties Oil Co.'s Olson 1, 10-23-22, sd 5810 ft. Carl W. Weller's Del Sable 1, 11-23-16, lcn.

MADERA COUNTY—Seaboard Oil Corp.'s Associated-General-Gill 1, 27-12-15, td 3630 ft, in gray sand, to run formation tester.

SOLANO COUNTY — Amerada Pet. Co.'s Hamilton 1, 24-4-2 (Rio Vista), td 4429 ft, gas well, shut in; Neil Hamilton 1, 36-4-2, td 4450 ft, 40,000,000 cu ft gas, shut in. Tracy Dr. Co.'s Hanson 1, 25-4-2, rig.

SAN MATEO COUNTY—Wilshire Oil Co.'s Cowell 1, 20-6-5 (Half Moon Bay), rig.

SUTTER COUNTY—Buttes Oilfields' No. 4, 2-15-1 (Marysville Buttes), td 5850 ft, gas well, shut in.

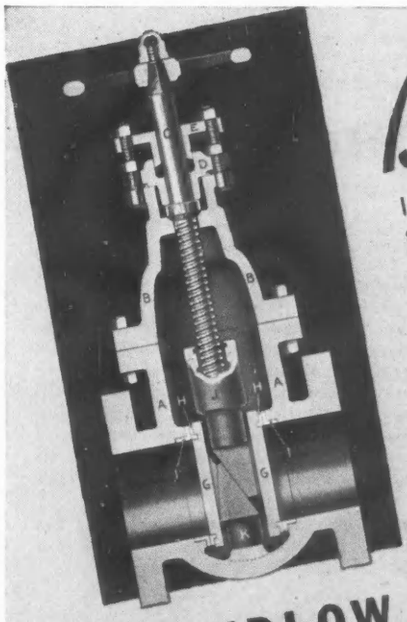
TULARE COUNTY—E. P. Jennings' No. 2, 33-23-23, dr shale 2570 ft. Magnet Oil Co.'s A.O. G-3, 29-24-24, spud 8/26, dr. Standard's Morris 1, 36-24-23, dr shale 7578 ft. Tulare Dome Oil Co.'s Tulare Dome 1, 17-21-23, td 3120 ft, plugging to redr. L. E. Turner's Glaze 1, 15-22-26, sd 3282 ft.

YOLO COUNTY—Empire Oil & Gas Co.'s No. 1, 8-9-3 (Woodland), lcn. Standard's Cook 1, 32-12-1, spud 8/21; E. E. Hooper 1, 32-9-1, td 3875 ft, fsh dr pipe.

MONTEREY COUNTY—Amil A. Anderson's Hillman 1, 15-24-14, dr shale 1610 ft.

SAN LUIS OBISPO COUNTY—Burkholder Oil Corp.'s Clay 1, 14-10-26, sd 3990 ft. Hancock Oil Co.'s Dicks 1, 30-12-33, td 839 ft, in shale and tar sand, wocs 10¾ in at 621 ft. A. O. Lewis' Pecho 1, 34-30-10 (Moro Bay), td 2750 ft, wet, to recement. Temblor Oil Co.'s No. 1, 22-31-21, td 3050 ft, treating with mud solvent. Vanguard Oil Co.'s Clark 1, 26-27-14, spud, dr water well.

SANTA BARBARA COUNTY—E. C. Arnold's Apache 2, 8-8-33, dr shale oil in frac-



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tures, 6090 ft. Crude Oil Dr. Co.'s Crude 1, 19-9-34, dr shale 514 ft. Gaviota Oil Co.'s Hollister 1, 35-5-33, dr brown shale 2850 ft. Hancock Oil Co.'s Los Alamos 2, 6-7-32, dr gray shale 5490 ft. Leora Oil Co.'s Fithian 1, 8-4-25, sd 1025 ft. Mid-Western Oil Co.'s No. L-1, 28-4-7, sd 2054 ft. Nine Springs Oil Co.'s Brinkinhoff 1, 9-7-30, sd 3300 ft. Tide Water Associated's Leonis 1, 3-6-33, dr brown shale 2890 ft. United Western Oil Co.'s No. 1, 16-7-30, rur. Valley Oil Co.'s Chief 1, 20-9-34, td 2315 ft, bailing. Vista Del Mar Oil Co.'s Williams 1, 16-4-26, dr shale 3530 ft.

SANTA CRUZ COUNTY—Elba Oil Co.'s Elba 1, 6-12-1, dr shale 3860 ft.

VENTURA COUNTY — Oxnard Oil Co.'s Vanoni 1, 10-1-22, dr shale (lower Pico), 4360 ft. Seven Seas Oil Co.'s Johnson 1 (Oxnard), rur. Vaca Oil Explor. Co.'s Livingston 1 (Oxnard), 6-1-21, dr shale 3160 ft, top tar zone 3100 ft. Richfield Oil Corp.'s McFarland 1, 13-2-21, dr shale 2277 ft. Texas Co.'s Pierce 1, 20-2-21 (Camarillo), dr shale 3680 ft.

SOUTHERN CALIFORNIA

NEWHALL—Barnsdall Oil Co.'s Rancho S. F. 2, 26-4-17, td 5017 ft, r. Holbrook Pet. Co.'s Newhall Land 1, 28-4-16, td 6073 ft, fsh.

PICO CANYON—A. G. Burt's No. 1, 36-4-17, sd 2060 ft.

LYNWOOD—Calizoo Oil Co.'s Saulque 1, 9-3-13, td 7520 ft, plug 5800 ft, sd.

NO. LONG BEACH — Geo. L. Clayton's Clayton 1, 32-3-12, dr sand and shale 5527 ft.

FOX HILLS—County Club Oil Co.'s County Club 1, 19-2-14, sd 4986 ft.

PALMDALE—Wm. S. Diller's Lindsey 1, 1-5-12, sd 1135 ft, to drop from report.

PALOS VERDES—Hunter & Associates' No. 1, 17-4-14, lcn. McClaren Bros.' No. 1, 27-4-14, td 3970 ft, redr to 1870 ft, tested good for 40 bbls 13 gravity oil, cut 10 percent, on pump; No. 2, 27-4-14, lcn.

PLAYA DEL REY—Robt. C. Hall's No. 1, 22-2-15, lcn. Metropolitan Oil Co.'s Metro. 1, 34-2-15, td 6541 ft, ran formation tester to 6364 ft, fair gas blow for 15 minutes and gas cut mud, sd for present.

SUNSET BEACH—A. S. Johnston Dr. Co.'s No. 30, 20-5-11, dr sand and shale 4605 ft.

WALNUT—Julian & Criswell's Langstaff 1, 5-2-9, dr shale, streaks sand 2420 ft.

CASTIAC—Royal Land Corp.'s Ramona Hills 1, 8-4-17, lcn.

DEL REY-VENICE—Sharley Oil Co.'s Santa Monica Dairy 2, 22-2-15, dr shale showing gas 7120 ft.

PUENTE—Simaroo Oil Co.'s Stern 1, 33-1-9, lcn.

MONTEREY PARK—Wales Pet. Co.'s Haig 1, 26-1-12, sd 3460 ft, to drop from report.

ORANGE COUNTY—Amalgamated Oil & Gas Co.'s Parr Com 1, 22-3-9, lcn. Shell Oil Co.'s Harbeson 1, 9-4-10, dr sand and shale 4691 ft. West American Oil Co.'s Irvine 1, 14-5-9, td 6070 ft, plugging and testing by stages.

KANSAS

BARBER COUNTY—Olson & Skelly's Elsea 1, sw se nw 27-32s-14w, dr 2685 ft. Helmerich & Payyne et al's Blunk Estate 1, cse 18-34s-13w, set 15-in csg 16 ft, woc. W. I. Southern, Inc.'s Davis 3, se se ne 24-34s-15w, dr cem.

BARTON COUNTY—Phillips' McClanahan 1, ne ne se 7-16s-13w, td 3377 ft, 2000 ft oih 1 hr, swbng. Ralph Wixon et al's Buhrle 1, se se ne 14-16s-13w, dr 1445 ft. Republic Natural Gas Co.'s Bloomer 1, ne nw nw 14-17s-11w, td 3338 ft, pot. 1128 bbls oil, comp. Armes & Vernon O&G Co.'s Parsons 1, sw sw se 7-17s-13w, dr 468 ft. Vickers Pet. Co.'s Lucas 1, nw nw ne 16-17s-14w, fsg 2660 ft. C. L. Price et al's Hammeke 1, ne ne sw 12-18s-12w, td 3427 ft, 1900 ft oih and 5 bbls wtr, 1½ days. Helmerich & Payne's Sessler 1, sw sw se 29-20s-11w, co 3414 ft. J. B. Hanna et al's Luce 1, sw sw sw 21-20s-13w, co 3511 ft. Brouk & National Ref. Co.'s Gory 1, nw nw sw 10-17s-13w, ru.

BUTLER COUNTY—Rex & Morris et al's Stephens 1, sw sw se 35-23s-3e, sd 500 ft. Saco Oil Co.'s Cotton 1, sw sw se 16-28s-6e, dr 2955 ft.

CHASE COUNTY—California-Illinois-Kansas Oil Co.'s Hughes 1, sw nw se 13-22s-9e, set 5-in csg 2599 ft, p. 7 bbls oil per hr, 90 percent wtr.

CHAUTAUQUA COUNTY—C. L. Brosius et al's Garrett 1, nw sw nw 26-32s-11e, set 6-in csg 1940 ft. Carft's Lagree 1, se nw ne 8-32s-12e, sd 400 ft. Robinson et al's Foster 1, sw sw sw 6-33s-12e, p. 120 bbls oil and 10 bbls wtr, 20 days. Harrison et al's Brown 1, ne se ne 19-34s-10e, dr 215 ft.

COWLEY CONUTY—E. B. Shawver et al's Fee 1, nw ne se 3-30s-4e, sd 2806 ft. Rex & Morris et al's Lanier 1, ne ne nw 10-30s-5e, td 2917 ft, D&A. National Ref. Co.'s Schwantes 1, nw sw ne 16-32s-3e, dr 3203 ft. Pryor & Lockhart's Brown 1, ne se se 34-33s-3e, brr. C. R. Ross et al's Walker 1, nw nw se 5-33s-11e, dr 2100 ft.

EDWARDS COUNTY—Douglas & Gear's Meade 1, se se nw 35-25s-16w, dr 3715 ft.

ELLIS COUNTY—Earl Wakefield et al's Burnett 1, nw nw ne 1-11s-18w, dr 3020 ft. Billings' Smith 1, se se nw 14-12s-16w, testing. Western Kan O & Ref. Co.'s Schmeidler 1, nw nw nw 22-12s-17w, dr 3335 ft. Lario O&G Co.'s Ball 1, nw nw ne 8-12s-18w, dr 1280 ft. P. G. Reynold et al's Karlin 1, nw nw nw 13-12s-18w, dr 1160 ft. Skiles et al's Hensen 1, sw se ne 26-12s-18w, dr 2050 ft. Colonial Oil Co.'s Albert 1, sw sw ne 31-12s-18w, dr 795 ft. L. M. Reynolds et al's Polcyn 1, se se ne 24-13s-16w, dr 935 ft. Brunson Drlg. Co. & Glimac Oil Co.'s Weisner 1, se sw se 31-13s-17w, dr 2105 ft. Aylward Prod. Co. et al's Berens 1, se se se 10-14s-16w, ru. Buffalo Oil Co.'s Phillip 1, ne ne ne 18-14s-16w, rur.

ELLSWORTH COUNTY—Equity Gas et al's Razac 1, ne ne se 31-15s-10w, set 8-in csg 2301 ft, dr 2810 ft. Colonial Oil Co.'s Hogy 1, nw nw sw 16-16s-10w, mim. Skiles et al's Sturn 1, se se sw 31-17s-9w, td 3255 ft, D&A.

GRANT COUNTY — United Prod. Co.'s Blake 1, c sw 21-30s-36w, set 7-nich casing 2369 ft, rust. Panhandle Eastern P. L. Co.'s Taggert 1, c sec 11-30s-37w, testing.

GREENWOOD COUNTY—Ward McGinnis et al's Henley 1, sw sw sw 25-25s-9e, td 2234 ft, woc. Eagle Oil Co.'s Stine 1, ne ne se 13-28s-10e, mim. S. Van Devanter et al's Dove 1, ne se sw 12-28s-11e, fsg 600 ft.

HAMILTON COUNTY—Denver P. & R. et al's Porter 1, sw sw ne 30-25s-41w, td 6453 ft, D&A.

HARPER COUNTY—Magnolia Pet. Co.'s Freeman 1, se nw sw 3-31s-6w, td 4896 ft, 600 ft wih, D&A.

JACKSON COUNTY—Lemmick Oil Co.'s Marble Savings Bank 1, cne ne 26-9s-14e, rig.

KEARNEY COUNTY—J. L. Murphy's Masonic Home 1, cne 1-26s-36w, fsg 1450 ft.

KINGMAN COUNTY — Carter Oil Co.'s Davis 1, ce½ ne ne 24-28s-8w, run 12-in csg 324 ft.

LOGAN COUNTY—Morgan, Flynn, Cobb et al's McMillan 1, cnw 9-13s-37w, sd for reprs 3489 ft.

LYON COUNTY—Davis & Sory's Byrd 1, sw sw se 32-21s-11e, td 1913 ft, 200 ft oih, co.

MARION COUNTY—Hutchinson O&G Co.'s Ehrman 1, se se sw 15-18s-1e, run 8-in csg. Western Kan. O. & Ref. Co.'s Suderman 1, se sw nw 22-20s-2e, dr 2895 ft.

McPHERSON COUNTY—C. E. Ash Drlg. Co.'s Broman 1, ne ne nw 19-17s-4w, dr 1600 ft. Wamhoff et al's Nuse 1, se ne sw 18-18s-4w, sd 1850 ft. Fred C. Frank et al's Doles 1, ne nw ne 12-19s-1w, set 8-in csg 2775 ft, sd. Clyde Pulse et al's Boesker 1, se se nw 29-20s-1w, rig Bradley Bros. et al's Barnholt 1, sw sw se 30-20s-5w, pumping and testing. Boyle & Grossman's Diener 1, se se ne 35-19s-1w, ru.

MEADE COUNTY—Pacific Mid-West Oil Co.'s Rexford 1, ne se sw 8-30s-29w, ru.

MITCHELL COUNTY—Geo. Siedhoff et al's Griess 1, nw sw se 16-8s-10w, so&g 3565 ft, dr 4022 ft.

NESS COUNTY—Newton Dev. Co. et al's Tenny 1, nw nw se 19-18s-25w, td 4406 ft, 3500 ft oih, sd. Jones & Lane's Page Milling Co. 1, se se nw 36-18s-26w, dr 1115 ft.

OSBORNE COUNTY — J. E. Waldron's Neuschwanger 1, se ne nw 11-8s-14w, spd and sd. Fred C. Chaddox ½ Atlantic's Slater 1, ne sw ne 33-10s-15w, sd 1270 ft. F. E. Fullerton & Son's Moray 1, ne se sw 27-10s-12w, set 13-in csg 50 ft, woc.

PHILLIPS COUNTY—C. W. Davidson et al's Ellif 1, se ne ne 35-5s-18w, sd 350 ft.

PRATT COUNTY—Atlantic, Empire & Skelly's Runyon 1, sw nw ne 11-27s-13w, testing. Skelly Oil Co. et al's S. B. Adams 1, se nw ne 2-28s-11w, dr 3620 ft.

RENO COUNTY — Sam Schneider et al's Kroecker 1, ne ne ne 12-22s-5w, dr 695 ft. Helmerich & Payne et al's Haines 1, sw sw sw 9-25s-5w, td 3991 ft, D&A. Pryor & Lockhart's Stuckey 1, nw sw sw 31-25s-5w, dr 3980 ft. Street & Butler's Kincaid 1, ne ne nw 13-24s-4w, rot rig. Carey et al's McPheeters 1, ne ne nw 22-26s-8w, ru. W. E. Witt et al's Fair 1, nw se se 4-22s-8w, pull 8-in csg 2433 ft. Cohen et al's Teter 1, se se sw 3-23s-5w, rig.

RICE COUNTY—Gillespie et al's Strong 1, ne ne nw 9-18s-8w, ru. John Hanna et al's Marshall 1, ne nw nw 30-18s-8w, sd 1515 ft. Bridgport Mach. et al's Habiger 1, nw nw nw 5-18s-10w, pay 3001-05 ft, est 6,000,000 cf gas and flow over rig. Skiles et al's Campbell 1, se se ne 28-19s-9w, dr 1605 ft. H. V. Holland et al's Brothers 1, se se se 12-21s-7w, td 3469 ft, swb 44 bbls oil per hr for 6 hrs. Gerbrand-Pulse Oil & Drlg. Co.'s Wellman 1, sw sw sw 22-21s-9w, dr 1220 ft. Oread Oil Co.'s Erion Estate 1, nw nw nw 34-21s-7w, lcn.

ROOKS COUNTY—W. W. Kiskadden et al's Ham 1, sw sw nw 25-7s-19w, rig. Graham et al's Fike 1, sw sw sw 9-9s-17w, td 3326 ft. P. 39 bbls oil and 48 bbls wtr, 8 hrs. C. R. Craft et al's Ziegler 1, ne ne sw 8-10s-16w, set 8-in csg 2860 ft, rust. J. H. Lester's Methany 1, se se ne 29-20s-10w, fsg 3875 ft.

RUSH COUNTY—Wakefield et al's Zimmerman 1, se se sw 7-16s-18w, dr 1675 ft. Wakefield & Brouk's Kerbs 1, nw nw se 11-17s-16w, rig. Westgate-Greenland Oil Co.'s Hagerman 1, ne ne ne 20-19s-16w, dr 3785 ft.

RUSSELL COUNTY—H. C. Eisenhour et al's Krouse 1, se se nw 18-13s-12w, spd and sd. Empire & Texas Co.'s Boxberger 1-B, ne ne ne 23-13s-15w, dr 568 ft. Park's Opdycks 1, sw sw sw 20-14s-13w, ru. Emrichs et al's Anderson 1, ne se sw 33-15s-11w, rig. Shell Pet. Corp.'s Batt 1, se se se 35-15s-14w, td 3320 ft, 2800 ft oih, swbng. Cities Service et al's Eichman 1, csw sw se 12-15s-14w, ru.

SEDGWICK COUNTY—Home Stake Royalty Co.'s Roy McCormick 1, sw sw sw 23-25s-3w, sso 3608-15 ft, dr 3757 ft. Roxanna Drlg. Co. et al's Woodman 1, sw nw sw 26-26s-1w, sd 2469 ft. National Ref. Co.'s Fee 1, se ne se 36-27s-2e, ru. I. W. Murfin et al's Martin 1, se se nw 32-28s-1e, dr 45 ft. W. C. Talbott et al's Downs 1, se se nw 32-28s-2e, dr 2100 ft. Palmer Oil Corp.'s Royal 1, ne ne ne 15-28s-1w, dr 3503 ft. Union O&R et al's

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STAFFORD COUNTY—Newman & Winemiller's Sittner 1, ne ne ne 33-21s-12w, testing. W. P. Faulkner's Moses 1, nw nw sw 9-22s-13w, dr 215 ft. Stanolind et al's Hartnett 1, nw nw se 23-24s-11w, set 6-in csg 3802 ft, rust. Kessler O&G et al's Jenkins 1, se se ne 15-25s-12w, brr. E. J. Shaffer's Spencer 1, nw nw sw 3-25s-14w, mim.

STEVENS COUNTY—Kuhn Bros. et al's Youngren 1, sw sw ne 1-32s-39w, td 2600 ft, 8,250,000 cf gas, comp.

SUMNER COUNTY — W. M. McKnab's Blair 1, sw sw sw 7-30s-1e, ur 12-in csg 1387 ft. Douglas & Gear's Strickler 1, sw nw ne 30-32s-1w, td 4457 ft, D&A.

TREGO COUNTY—Phillips Pet. Co.'s Trego 1, cne nw 14-12s-23w, set 8-in csg 3718 ft, rust. Central Commercial Oil Co.'s Locker 1, csw 12-14s-22w, brr. F. L. Thorn et al's Koeppen 1, se se sw 31-14s-24w, dr 4050 ft.

WALLACE COUNTY—H. F. Wilcox O&G Co.'s Parker 1, se se ne 9-11s-40w, brr.

WOODSON COUNTY—Ward McGinnis et al's Smith & Jobes 1, nw nw se 10-24s-15e, td 1633 ft, gso and woc. Morris et al's Koening 1, se se nw 33-24s-15e, td 1458 ft, D&A. Fred Rapp's Houghland 1, nw nw se 2-25s-15e, sd 1400 ft. Becker Bros.' Venni 1, cnw nw sw se 22-25s-14e, dr 140 ft.

NORTH LOUISIANA

BIENVILLE PARISH—De Soto O&G Co.'s Wm. Ashley 1, 15-16n-10w, 7-in csg 5475 ft, perf 3 times 5130-80 ft, acidizing, td 5650 ft. Hunt & Seaboard's Commercial Bank 1, ne nw 3-16n-6w, dr 5735 ft, lime & shale. McDowell et al's Locke 1, ne c 9-15n-10w, sd 2921 ft.

CADDO PARISH—W. J. Hunter et al's N. B. Stoer 1, 10-15n-15w, flowing gas, distillate washwater, mud & so, through separator, wo gauge after perf 5100-20 ft, old td 6562 ft. Prairie River Synd's Hutchinson 1, 15-15n-12w, elev 153 ft, top lower Marine 8380 ft, coring tight sand 8788 ft. Fallon Oil Co.'s Cupples 1, 24-16n-13w, cutting out tub to perf csg 4800-18 ft, old td 5675 ft.

CLAIBORNE PARISH—J. R. Bevill et al's Alex Edmonds 1, ne ne 16-20n-5w, elev 160 ft, acidized 2500 ft, oih, wosr, td 5413 ft, basal Glen Rose lime. J. B. Bond's Burgess 1, 3-20n-5w, acidizing, old td 5800 ft. United Gas P. S. Co.'s Brownfield et al 2, c sw se 5-19n-5w, completed 20-25 mil ft, wet gas, td 5730 ft, Travis Peak; Brownfield et al 1,5-19n-5w, owdd. Stevenson 1, se sw se 6-19n-5w, owdd, td 4350 ft. Lyons & Heely's Rufus Sims 1, ne ne 32-20n-5w, rur.

DE SOTO PARISH—Clear Lake Oil Co.'s J. A. Woolums 1, 29-12n-12w, arr deepen 1518 ft. E. M. Harter's Qiaque 1, 26-11n-11w, coring 2918 ft. Pullman Oil Co.'s Ramsey 3, 35-11n-11w, testing td 2942 ft; Ramsey 2, 36-11n-11w, spd dr 200 ft. Gamble et al's Buskin 1, 11-10n-11w, rur. Paul Miller's Barron 1, 36-11n-11w, arr test, td 2933 ft.

FRANKLYN PARISH—Jenson et al's Grayson 1, c ne 36-12n-6e, arr pb & perf at 1735 ft, old td 2516 ft. Tensas Delta Oil Corp.'s Woodland 1, sw se ne 22-11n-11e, dr 3800 ft, sand, shale, lime.

LINCOLN PARISH—G. E. Burford et al's P. N. Hanna 1, w½ se 34-18n-4w, dr 5150 ft. T. L. James & Co.'s Spencer 1, ne 11-17n-4w, dr 5920 ft, lime. Lide & Greer's Causey 1, 32-19n-2w, top Travis Peak 5597 ft, csg 5403 ft, perf csg 5316-36 ft, 5-3/16-in csg set at 2300 ft, woc, old td 5822 ft. Ludel Oil Co.'s Gill 1, 36-20n-2w, dr 3643 ft. E. H. Moore's Commercial Bank-Williams 1, nw¼ nw¼ 22-18n-5w, rur. Gigantic Oil Co.'s R. L. Sanderson 1, 30-18n-1w, elev 151 ft, ready to spd.

MOREHOUSE PARISH—Rondeau et al's Clarke 1, 10-20n-7e, owdd td 3755 ft.

NATCHITOCHES PARISH—Roy Raines et al's Allen 1, 22-9n-10w, sd 220 ft.

RED RIVER PARISH—Whitehurst et al's LeLong 1, 25-12n-11w, sd 250 ft. W. J. Hunter's Long Bell Lumber Co. 2, 20-13n-19w, dr 3490 ft.

SABINE PARISH—Deep Rock Oil Co. et al's Whitney Corp. 1, 8-9n-13w, elev 290 ft, dry abn old td 8510 ft, top Travis Peak 6525 ft. E. Howard's Sabine Lbr. Co. 1, ne nw 24-9n-12w, rur. Romine et al's La. Long Leaf Lbr. Co. 1, 7-5-12, spd. Ellis Prod. Co.'s Martin 1, 8-6n-12w.

TENSAS PARISH—Sherrouse & Snyder's Chicago Mill & Lbr. Co. 1, 30-12n-10e, arr abn & move to new lcn, td 798 ft.

WEBSTER PARISH — Magnolia's Aarnes-Cox 4, ne nw 22-21n-10w, dr 4465 ft. A. J. McCook 2, sw sw 22-21n-10w, cemtd 5-in csg 8253 ft, woc, td 8293 ft. Ohio's Bodcaw Acc. 2, 47, c sw se 15-21n-10w, elev 200 ft, dr 7320 ft. S. P. D. Coyle & W. Cox 1, c sw se 23-21n-10w, elev 211 ft, dr 5950 ft. Thos. Crichton Acc. 2, 1, c se ne 21-21n-10w, elev 217 ft, dr 7563 ft. R. L. Holloway B-7, 23-21n-10w, elev 196 ft, dr 7165 ft. Merritt 1, 14-21n-10w, dr 4950 ft. A. G. Oliphant et al's Sam Banks 1, ne ne 34-21n-10w, elev 196 ft, dr 6585 ft, shale. Standard Oil of La.'s Davis 7, 23-21n-10w, dr 4568 ft. Mrs. M. E. Gray 2, ne nw 26-21n-10w, dr 4854 ft. E. L. Stewart 1, c se se 32-21n-10w, elev 240 ft, top Bodcaw, lower Marine 8589 ft, 7-in csg 8681 ft, completed after shooting csg three times making 400 bbls distillate & 5 mil ft gas daily td 8700 ft.

WINN PARISH—Georgetown Oil Co.'s Tremont Lbr. Co. 1, 19-10n-1e, sd 1600 ft. G. W. Zeigen's La. Central Lbr. Co. 11, sw nw 11-13n-1e, dry abn 1730 ft.

SOUTH LOUISIANA

ACADIA PARISH—W. C. Daniel's Setting 1, Trilby prospect, 17-9s-1w, dr shale 4751 ft. Humble's Federal Land Bank 1, North Crowley prospect, 34-8s-1e, woc 8640 ft. Same operator's Sarver 1, South Crowley area, 35-10s-1e, dr shale 160 ft. J. G. Markley's Ed Daigle Farms Co. 1, Churchpoint prospect, 19-7s-2e, fsh 3896 ft.

CALCASIEU PARISH—D & D Oil Co.'s Lutcher Moore 1, nw of Starks, 1-8s-13w, dr shale 7209 ft.

CAMERON PARISH—Humble's Miami Corporation 1, Prema area, 8-14s-5w, ru. Pure's State Mallard Bay 2, Mallard Bay prospect, 14-13s-3w, dr shale 7598 ft. Superior's State 1, in Gulf of Mexico, 4-15s-8w, mim.

EAST BATON ROUGE PARISH—Cavalier's Elliott 1, n of Hope Villa, 3-8s-2e, sd 6157 ft.

EVANGLINE PARISH—Continental's Tate 1, 44-3e-2e, dr shale 8994 ft.

IBERIA PARISH—Jefferson Lake's Lake Peigneur 414, 12s-5e, sd 7071 ft. Texas Co.'s State Vermilion Bay 2-B, Vermilion Bay prospect, 16s-5e, spudded

JEFFERSON DAVIS PARISH—Stanolind's Calcasieu National Bank B-2, China prospect, 28-7s-2w, comp. 128 bbls 52 gravity distillate daily 8965 ft. Union Sulphur's T. R. S. Farms 1, South Roanoke area, 23-10s-4w, woc 8620 ft.

LAFOURCHE PARISH—Amerada & Louisiana Land's South Coast Corp. 1, Raceland area, 34-15s-19e, dr shale 540 ft. Gulf's State PP 3, sw of Marchland prospect, 36-23s-21e, dr shale 6919 ft.

LIVINGSTON PARISH—Neville & Grubbs' Evans 1, Mallet Bluff area, 47-7s-3e, washing 7656 ft.

PLAQUEMINES PARISH—Gulf's State QQ 3, Quarantine Bay, 17-19s-17e, dr shale 1989 ft.

ST BERNARD PARISH — Southern Sulphur Co.'s State 2, in Lake Borgne, 38-14s-15e, sd 3448 ft.

ST. MARTIN PARISH—Texas Co.'s St. Martin Land Co. 10, Henderson prospect, 15-8s-7e, dr shale 5380 ft.

ST. MARY PARISH — Texas Co.'s State Bateman Bay 1, s of Morgan City, 21-16s-12e, dr shale 10,635 ft.

VERMILION PARISH — Continental's Brookshire 1, Abbeville area, 66-12s-3e, dr shale 11,388 ft.

VERNON PARISH—Castor Creek Dr. Co.'s Llano Del Rio 1, 34-2n-9w, dk.

MICHIGAN

ALCONA COUNTY—John Langloh's Kurrasch 1, sec 10-27n-3e, co 1400 ft. Thalman & Morris' Kohlman 2, sec 10-26n-7e, rig.

ALLEGAN COUNTY—E. L. Andrew's Perrigo 1, sec 28-2n-13w, dr 100 ft. Champion Dev. Co.'s Detling 1, sec 35-2n-13w, dr 1460 ft; Siko 1, sec 9-1n-12w, lcn; Young 1, sec 26-1n-12w, dr 350 ft. James E. Flanigan's Brown 1, sec 29-1n-13w, so and water 1350 ft. John J. Arlen's Barnicle 1, sec 33-2n-14w, dr 800 ft.

ARENAC COUNTY—Gordon Oil Co.'s State B-1, sec 2-19n-3e, testing 3080 ft, Dundee top 2924 ft. Joe Zucker's Reed 1, sec 10-19n-5e, dr 1500 ft. Harvey Linabury's Smith 1, sec 17-19n-6e, sd 2070 ft.

BAY COUNTY—Charles Weller's Dwyer 1, nw nw sw 20-16n-3e, lcn. Wright & Keeler's Booth 1, sec 24-14n-6e, elev 585 ft, Dundee 2710 ft, dr 2890 ft. Victory Pet. Corp.'s Lokowski 1, sec 27-14n-3e, 170 ft.

CLARE COUNTY—Pure Oil Co.'s Apel 1, sec 31-19n-5w, dr 3700 ft. McClanahan Oil Co.'s Mortenson 1, sec 9-18n-5w, co 1600 ft.

GLADWIN COUNTY—Dibble Brother's Delbridge 1, sec 1-17n-2e, dr 1500 ft; Kimble 1, sec 16-18n-1e, sd 3375 ft. Harold J. Hand's Smart 1, sec 29-17n-2e, Dundee 3414 ft, oil 3490 ft, testing 3497 ft. D. E. Hughe's Cox 1, sec 12-19n-2w, dr 990 ft. Dapar Oil Co.'s Villeneuve 1, sec 11-20n-2w, dr 1490 ft.

ISABELLA COUNTY—C. E. Weller's Cotter 1, sec 11-15n-5w, dr 1400 ft. Boston Oil & Gas Co.'s Fox 1, sec 23-15n-5w, dr 1460 ft. James Peirce's Herman 1, sec 4-16n-3w, dr 600 ft.

MIDLAND COUNTY—Sun Oil Co.'s Consumers 1, sec 8-16n-1w, dr 3540 ft. Mammoth Pro. & Ref.'s Penny 1, sec 9-16n-2w, dr 150 ft.

LAKE—Cherry Valley Drlg. Co.'s Rice 1, sec 25-18n-12w, lcn.

MISAUKEE—Rex Oil & Gas Co.'s Meekoff

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COMPREHENSIVE INDEX
of the
PUBLICATIONS OF
THE AMERICAN ASSOCIATION
of
PETROLEUM GEOLOGISTS
1917-1936
By
DAISY WINIFRED HEATH

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THE AMERICAN ASSOCIATION
OF PETROLEUM GEOLOGISTS
Box 1852
Tulsa, Oklahoma, U. S. A.

1, sec 30-21n-6w, ur 3770 ft; Weatherby 1, sec 28-12n-9w, dr 340 ft.

NEWAYGO—Muskegon Oil Co.'s Carlson 1, 9-16n-12w, fsg 3150 ft.

OTSEGO—Harley William's Raae 1, sec 15-30n-1w, dr 2560 ft.

ROSCOMMON—Seger & Swan's Barnett 1, sec 36-21n-1w, dr 2700 ft.

SAGINAW—Mid-West Dev.'s Spurbeck 1, sec 6-11n-2e, Dundee 3160 ft, csg 5 in 3166 ft.

SANILAC—T. H. Ferguson's Obee 1, sec 17-14n-14e, sd 550 ft.

TUSCOLA—C. W. Spaulding's Dalrymple 1, sec 35-10n-7e, dr 2400 ft.

MONTANA

CHOUTEAU COUNTY—Security Petroleum Corp.'s Johnson 1, ne 23-26n-3e, dr 500 ft.

GLACIER COUNTY—W. E. Ullman's Allotted 1, c sw 35-36n-8w, dr 2525 ft.

PONDERA COUNTY—Kirk Oil Co.'s Kellog 1, se nw nw 31-28n-4w, testing at 2296 ft.

TOOLE COUNTY—Model Oils Ltd.'s Fey 1, c ne sw 5-38n-3e, dr 1900 ft.

YELLOWSTONE COUNTY—Broadview Dome Oil Syndicate's Halbritter 1, se nw 18-3n-23e, dr 2465 ft. Laurel Oil Co.'s 1, nw sw 7-2s-24e, mit.

OKLAHOMA

ADAIR COUNTY — B. L. Maddox' Penn Mutual Life Ins. Co. 1, cs¼ ne nw 5-16n-24e, dr 260 ft.

ATOKA COUNTY—A. L. Larson's Mason 1, sw se se 35-1n-14e, dr 2105 ft. C. M. Sheldon & Gardner Pet. Co.'s Lee 1, ne nw sw 2-4s-10e, spd. Hagey et al's Becker 1, cne¼ 4-1n-13e, lcn. Hagey et al's Peck 1, cne¼ 6-1n-13e, lcn.

BECKHAM COUNTY—Bud Lewis' Douglas 1-A, se ne ne 21-8n-26w, td 2237 ft, D&A. Mid-American Oil Co.'s Biscoe 1-A, sw sw sw 28-8n-22w, ur 5-in csg 2130 ft, td 2200 ft.

BRYAN COUNTY—Southern Oil Co.'s Henry 1, cnw ne 10-8s-7e, lcn.

CADDO COUNTY—Clyde Becker et al's Pharris 1, se se nw 24-6n-4w, sdo 6235 ft. I. T. I. O. Co.'s Dome-Bo 1, cne se 29-6n-10w, woc 305 ft.

CLEVELAND COUNTY — Harper-Turner's Pollock 1, cw½ nw nw 13-9n-2w, lcn. Hollenback's Norman 1, nw nw ne 17-9n-2w, dr at 6336 ft. Hollenback's Ward 1, sw se ne 30-7n-1e, dr 5760 ft.

CHOCTAW COUNTY—V. K. Chapman & Low's Hallum 1, nw nw ne 4-7s-20e, mach.

COAL COUNTY—Phillips Pet. Co.'s Beck 1, se sw sw 6-1n-9e, dr 2105 ft. Carter Oil Co.'s Claytor 1, cw½ ne sw 27-2n-9e, so&g 4741-50 ft, dr 4874 ft.

COMANCHE COUNTY—J. W. Wolf's Costinus 1, sw sw se 30-4n-11w, spd. Frank Scott's Kuntz 1-A, se ne se 27-4n-11w, sd 2793 ft. Andrichak's Korthouse 1, nw ne sw 33-2n-18w, so 740-43 ft, dr 980 ft.

COTTON COUNTY—Bowers & Wise' Pendergraft 1, nw se sw 4-4s-12w, der.

CREEK COUNTY—M. W. Mosier et al's Holcomb 1, se sw ne 19-18s-8e, td 3009 ft, dr plug. L. B. Jackson's Alberty 1, ne ne nw 25-18n-9e, ur 8¼-in csg 2420 ft.

GARVIN COUNTY—Carter Oil Co.'s Potts 1, ce½ se nw 36-1n-3w, so 1196-1204 ft, dr 1475 ft. B. C. D. Edwards' Clark 1, ne ne ne 16-3n-3e, fsg 1400 ft.

GRADY COUNTY—Gulf Oil Corp.'s Thomas 1, sw nw nw 14-4n-5w, dr 6785 ft. Doyle Pet. Co.'s Huffine 1, nw nw se 30-5n-8w, der.

GRANT COUNTY—Carter Oil Co.'s Crisman 1, cw½ sw nw 16-25n-3w, testing.

GREER COUNTY — J. I. Medlin et al's Broudie 1, nw nw nw 5-6n-20w, ru and sd.

HASKELL COUNTY—Continental Oil Co.'s Ferguson 1, sw se ne 33-8n-20e, dr 6119 ft, dry sand.

HUGHES COUNTY—Carter Oil Co. et al's Hamilton 1, cw½ ne sw 33-4n-9e, testing. Phillips Pet. Co.'s Becker 1, ne nw sw 8-5n-10e, spd. H. H. Ellis' Tiger 1, nw se sw 29-6n-8e, sd 550 ft. W. O. Allen et al's Barnard 1, sw sw sw 24-8n-8e, est 500,000 cf gas, shot 10 qts and incr to 1,500,000 cf gas. The Texas Co.'s Cox 1, ne nw nw 23-9n-8e, td 4397 ft, sho wtr, pb 4071 ft, woc. Moroney & Healey's Gield 1, cnw sw 11-9n-11e, sd 3476 ft. E. H. Moore's Buck 1, cnw sw sw 21-8n-10e, td 3488 ft, testing shut off.

JACKSON COUNTY—Ace Gutowsky et al's Booker 1, nw nw nw 33-2n-18w, so, td 580 ft, mi mach. Ace Gutowsky et al's Lee 1, nw nw se 36-2n-19w, lcn. W. W. Gutowsky et al's Howard 1, ne sw nw 10-3n-19w, sd 950 ft, tools in hole.

JEFFERSON COUNTY—Massad & Swansberger's Barrett 1, ne se se 14-6s-6w, sd 1842 ft.

JOHNSTON COUNTY—Patton et al's McCrummens 1, sw sw ne 16-1s-6e, sd 1165 ft. W. T. Shelton's Chapman 1, cnw nw 26-4s-6e, dr 580 ft.

KAY COUNTY—Fortuna Oil Co.'s Harris 1, sw sw ne 14-25n-1e, sd 383 ft.

KIOWA COUNTY—E. L. Lippert's Miller 1-A, nw nw nw 14-2n-18w, dr 600 ft. Kiowa Oil Corp.'s Finder 1, csw ne 4-6n-20w, sd. Hughes & Reese' Fultz 1, se se se 10-6n-18w, sd for 10-in csg.

LATIMER COUNTY — Clark Drlg. Co.'s Wilson 1, cse se 15-5n-18e, testing.

LINCOLN COUNTY—Continental Oil Co.'s Community 1, nw nw se 7-15n-5e, rur.

LOGAN COUNTY—Shell Pet. Corp.'s Waddle 1, sw se nw 36115n-4w, td 6791 ft, D&A. Anthony & Marshall's Fruin-Eckman 1, se se sw 4-16n-1e, so&g 4975 ft, sd. Sunray & Olson's Canning 1, sw sw ne 31-17n-1w, dr 2725 ft.

MAJOR COUNTY—Ed Parsons' Patzkowsky 1, cnw¼ 10-20n-11w, rig.

MARSHALL COUNTY—Paul Robb et al's Vittitoe 1, cne se 11-5s-4e, td 5461 ft, co 720 ft.

MURRAY COUNTY—Power Oil Co.'s Lancaster Trust Co. 1, csw ne 10-2s-2e, td 3714 ft, cem lost dr pipe. O. O. Owens' Gryer 1, ne se ne 34-1s-3e, td 2574 ft, 1400 ft wih, sd. Meyer & Greenup's Arbuckle Royalty Co. 1, nw nw ne 18-2s-3e, spd 48 ft, sd.

MUSKOGEE COUNTY—F. E. Cusack's Elliott 1, cnl nw sw 20-15n-20e, rog. Cusack's Fee 1, ne sw se 20-15n-20e, spd 65 ft.

NOBLE COUNTY—Seaboard Western Oil Co.'s Guthrie 1, nw nw ne 6-20n-2w, dr 500 ft. Herndon Drlg. & Atlantic's Baggett 1, se se se 13-21n-3e, dr 4044 ft. Darbyy Pet. Co.'s McCoy 1, sw sw sw 24-23s-2w, lcn.

OKFUSKEE COUNTY—Burke-Greis' Rhea 1, sw sw se 14-10n-9e, lost bailer, to skid rig. F. W. Merrick's Mackey 1, ne ne sw 29-11n-10e, td 2045 ft, dry sand.

OKLAHOMA COUNTY—Frank Buttram et al's Cole 1, nw nw nw 16-14n-1e, dr 4895 ft. Ardie Oil Co.'s Pate 1, ne ne se 16-14n-4e, lcn.

OSAGE COUNTY—National Ref. Co.'s Page 2, nw sw se 28-22n-9e, lcn.

PAYNE COUNTY—H. S. Brim et al's McKenzie 1, cwl se ne ne 13-18n-3e, C&P.

PITTSBURG COUNTY — Okla. Dist. Oil Co.'s Beeler 1, ne ne sw 7-7n-14e, shot 145 qts 4504-45 ft, est 1,000,000 cf dry gas, si.

PONTOTOC COUNTY—Norbla Oil Co.'s McBride 1, ne ne sw 10-2n-5e, sd 300 ft. C. W. Roodhouse et al's Booth 1, se nw se 20-2n-6e, av 44 bbls oil per day. Union Dev. Co.'s Abbott 1, sw nw ne 34-3n-6e, dr pipe stuck 2500 ft. Kerlyn Oil Co.'s Pratt 1, sw se ne 6-4n-4e, dr 773 ft. Boettcher O&G Co.'s Cann 1-A, se nw ne 25-4n-7e, fsg dr pipe 4347 ft.

POTTAWATOMIE COUNTY — Richborn Oil Co.'s Fiddler 1, ne ne ne 9-5n-5e, ru and sd. Hightower's Baker 1, se se nw 27-6n-3e, rig. Roy S. Nash et al's Miller 1, cn½ ne se 29-6n-3e, dr 4405 ft. British American Oil Prod. Co.'s Ramsey 1, se se ne 27-6n-4e, hf sulphur wtr, sd. Mid-Continent Pet. Corp.'s Ne-Thah-Pea-Se 1, se se ne 24-11n-4e, av 100 bbls oil per day, 2 days. Atlantic Ref. Co.'s Dooley 1, se se sw 9-11n-5e, sd.

PUSHMATAHA COUNTY—Erle Halliburton et al's Gabwell 1, sw ne ne 30-2s-15e, so 3050 ft, dr 4375 ft.

SEMINOLE COUNTY—Stanolind, Amerada & Mid-Continent's Salina 1, se ne nw 4-5n-6e, td 3317 ft, dr plug. Gillespie & Moore's Gaines 1, ne sw sw 20-6n-7e, td 2737 ft, 34,000,000 cf gas and sso, comp. J. F. Root's Cone 1, nw ne sw 11-7n-5e, C&P. E. W. Jones et al's Belford 1, ne se ne 9-9n-8e, dr 3980 ft. Atlantic & Gulf's Decker 1, sw sw sw 32-11n-6e, sdo 4690 ft. Phillips Pet. Co.'s Gilcrease 1, nw nw se 16-7n-12e, dr 173 ft.

STEPHENS COUNTY — Coline Oil Co.'s Johnson 1, sw se ne 1-2n-8w, dr 8905 ft. Ed Parsons et al's Blake 1, csw nw 22-2n-8w, td 4966 ft, bail and filled 250 ft oil 4½ hrs, est 25 to 35 bbls oil, sdo. Newsom's Pfile 1, sw sw sw 1-2s-7w, sd 115 ft. Jack Cohen's Pierce 1, ne ne nw 24-2s-6w, dr 1146 ft. Carter Oil Co. et al's Harley 1, cne ne 24-2s-4w, td 8157 ft, av 1000 gals, flo 130 bbls oil per hr.

TILLMAN COUNTY—I. T. I. O. Co.'s Graham 1, se se ne 1-3s-19w, td 3081 ft, hfo 18 hrs, to test. Gulf Oil Corp.'s Prichard 1, se nw se 32-3s-16w, dr 1885 ft. Tom Walker's Bowman 1, sw sw nw 10-4s-17w, sd. Caven et al's Southerland 1, sw sw nw 35-4s-16w, ru and sd.

WASHITA COUNTY—L. B. McWhirter et al's Fee 1, nw sw sw 34-8n-19w, sd 1810 ft. John Koberg's Harms 1, nw nw ne 6-10n-16w, dr 4260 ft.

EAST TEXAS

ANDERSON COUNTY—C. & G. Oil Co. et al's F. A. Newsom 1 (30-ac), T. C. Lively sur, Percilla area, elev 486 ft, Pecan chalk 4635-4870 ft, Austin chalk 5625-5909 ft, top Woodbine 5993½-6004 ft, tested water with trace oil, dry and abd. Humble O&R Co.'s Suie Hassell 1 (80-ac), Jas. Beard sur, 2 mi n Jarvis, elev 361 ft, Pecan chalk 3453-3899 ft, dr 3960 ft. Roeser & Pendleton, Inc.'s V. W. Bowyer 3 (200-ac), E. Ritter sur, Cayuga field, elev 317 ft, top Woodbine 3991 ft, top Georgetown 4749 ft, anhydrite 7110-7478 ft, used 10,000 gals acid in lower Glen Rose 7676 ft, showed little oil, pb to 4096 ft, gun-perforated 4084-87 ft flowing oil from Woodbine.

BOWIE COUNTY—Russell & McGuire (was Fay T. Chew and Brassett's) B. Barkinson 1 (90-ac), J. W. Parkman sur, 2½ mi n Leary, elev 312 ft, sd 2851 ft. Ferguson & Hill's A. Y. Breckenridge 1 (412-ac), Nancy Dycus sur, 4 mi w Texarkana, top Annona chalk 1308 ft, top Blossom sand 2063 ft, sd 2950 ft. Woodley & Bentley's J. D. Lumpkin 1 (245-ac), John McDermott sur, 1¼ mi sw Dalby Springs, elev 290 ft, Annona chalk 1665-2090 ft, pb fr 4404 to 1300 ft, dr by junk. Austin chalk 2984-3191 ft, top Woodbine 3560 ft, Georgetown lime 3860-4360 ft, Fredericksburg 4410-4777 ft, sd 4844 ft.

CHEROKEE COUNTY—Merica Oil Co.-W. L. Stone's Cherokee Dev. Co. 1, A. J. Acker sur, 2 mi e Maydelle, mim. Alfred C. Bierman et al's J. L. Strong 1 (181-ac), F. J. Anthony sur, 1 mi nw Mixon, elev 399 ft, Pecan chalk 3208-3552 ft, dr shale 4065 ft.

ELLIS COUNTY—Gigantic Oil Co., Inc.'s C. H. Sullivan 1 (90-ac), Simon Garcia sur, 4 mi n Frost, top Paluxy 3018 ft, fsh 3700 ft.

FANNIN COUNTY—Stewart Oil Co. (was Art Glazier et al's) N. Young 1 (67.24-ac), S. H. Hitchcock sur, near Randolph, dr 1040 ft.

FREESTONE COUNTY — Holt, Young & Nannly's W. H. Chambers 1 (125-ac), W. D. Allison sur, 2¼ mi n Keechi, elev 426 ft, top Pecan chalk 3980 ft, dr 5230 ft. C. E. Rossiter et al's J. P. Fulton 1 (441-ac), J. P. Fulton sur, sd 956 ft.

GREGG COUNTY — Humble & Gulf Oil Corp.'s E. D. Robertson 1 (11.4-ac), M. Mann sur, 2½ mi w by s of Longview, 4 mi e of prod., Trinity test, elev 272 ft, dr 2500 ft.

HENDERSON COUNTY—American Liberty Oil Co. et al's E. B. LaRue-Johnson 1, blk 11,

PETROGRAPHIC AND PHYSICAL CHARACTERISTICS OF SANDS FROM SEVEN GULF COAST PRODUCING HORIZONS

By M. T. Halbouty, B.S., M.S.,
Merit Oil Corp.

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Phillip Jackson sur, 2 mi w LaRue, Trinity test, elev 464 ft, top Midway between 1323 and 1353 ft, top Navarro 2015 ft, Pecan chalk 2765-2980 ft, dr 2950 ft. Wm. McDougal, Tr. et al's Trinity Farm Securities Co.-R. M. Manning 1 (200-ac), H&TC Ry. sur, 4 mi s Malakoff, dk. Tide Water Associated-Seaboard & Humble's McElreath-Suggett 2-C (149-ac), W. P. Wyche sur, 1½ mi nw Opelika, elev 452 ft, top Woodbine 4450 ft, top Georgetown 5070 ft, top Paluxy 6087 ft, top first Glen Rose 6282 ft, top anhydrite 6991 ft, massive anhydrite 7315-7713 ft, flowed wtr at 7830 ft, gas bubbles at 8570-88 ft, coring Glen Rose 8590 ft.

HOUSTON COUNTY — American Liberty Oil Co. et al's J. A. Bean 2 (30-ac), Wm. Burke sur, Grapeland area, dr 1700 ft. Ridgeway & F. B. Jackson's H. F. Moore 2 (53-ac), Henry Masters sur, 2 mi se Crockett, mim.

HUNT COUNTY—Bauersfeld & Aue, Inc. (was Texola Land Corp.'s) J. M. Goin 1 (250-ac), Jas. Merrick sur, 2 mi sw Wolfe City, elev 606 ft, sd 1010 ft.

KAUFMAN COUNTY—J. M. Scott-J. B. Woodside et al's Wood & Temple Nash 1 (80-ac), Juan Cortez sur, 1 mi e Scurry, elev 401 ft, top Woodbine 2270 ft, top Georgetown 2849 ft, td 3015 ft, set whipstock.

LAMAR COUNTY—Blackman & H. W. McGee's J. M. Duff 1 (75-ac), J. C. Lamb sur, near Powderly, sd 1022 ft.

LEON COUNTY—J. W. Kelley & Fox's L. W. Bryant 1 (48-ac), A. M. Coulter sur, 1 mi ne Marquez, mim.

LIMESTONE COUNTY — Pure Oil Co.'s Kendrick 16-T (96-ac), 3 mi w Mexia and in field, elev 508 ft, top Woodbine 2896 ft, top Georgetown 3365 ft, top fist Glen Rose 4270 ft, top broken anhydrite 5132 ft, top Travis Peak 5656 ft, cem 8⅝ in cas 6403 ft, dr 6620 ft. Stanolind O&G Co.-Ramsey Pet. Corp.'s T. Norris 1 (40-ac), K. Thrasher-H&TC Ry. sur, 5 mi n Kosse, Trinity test for Thornton fault, dr 1400 ft.

MORRIS COUNTY—Joiner Oil Corp.'s Morris Sheppard 1, MEP&P Ry. sur, 3 mi nw Naples, elev 315 ft, dr J. O. Whittington et al's Joiner Leasing Co. 1 (320-ac), T.C. Ry. Co. sur No. 734, 8 mi nw Naples, mim.

NAVARRO COUNTY—Mues & Low's (was L. N. McCulloch et al) Berry Bros. 1 (35-ac), W. W. Moss sur, 1 mi n Dawson, Austin chalk 751-1060 ft, top Woodbine 1384 ft, sd 1600 ft. Mrs. Jane Robinson et al's Fortsan Bros. 1, Eli Smith sur, 5 mi ne Corsicana, rig. Tom Sharp et al's E. B. McDowell 1 (65-ac), T. J. Jordan sur, ½ mi s Bazette, sd 2300 ft.

RED RIVER COUNTY—Texas Trading Co., Inc.'s Southern Pine Lumber Co. 1 (102-ac), D. D. Bruton sur, 12 mi n Clarksville, elev 407 ft, top water sand 2061 ft, dry and abd 2385 ft.

RUSK COUNTY—Nivla Oil Corp. et al's Citizens Nat'l Bank 1 (50-ac), M. D. Carmel sur 2½ mi se Henderson, elev 471 ft, top Georgetown lime 3340 ft, first anhydrite 5515 ft, massive anhydrite 6175-6395 ft, porosity in lower Glen Rose 6495-6527 ft, dry and abd 6802 ft. J. W. Shipman et al's Citizens Nat'l Bank-L. T. Burton 1 (125-ac), J. J. Y'Barbo sur, 4 mi ne Henderson, elev 432 ft, base Georgetown lime 3676 ft, dr 4370 ft.

TITUS COUNTY—J. N. Buchanan & G. E. McGrede's Mrs. Cal Russell 1, J. M. G. Rutherford sur No. 467, 8 mi w Daingerfield, elev 326 ft, dry and abd 2200 ft.

EAST TEXAS BORDER COUNTIES

HARRISON COUNTY—J. B. Bond's Bailey & Martin 1, Geo. Martin sur, elev top Pecan Gap 1790 ft, dr 4662 ft shale. Highway 80 Oil Co. of Texas' Mable George 1, J. S. Powell sur, elev 279 ft, sd 2506 ft.

MARION COUNTY—Ark. La. Gas Co.'s J. P. Fant 1, L. Cadenhead sur, elev 336 ft, 900 ft oih, swabbing after pb to 6178 ft, old td 6188 ft. Emma Ford 1, A. de los Santos Coy sur, completed as oil well, td 6097 ft; Emma Ford 2, A. de los Santos Coy sur, mim; Wade Houston 1, A. de los Santos Coy sur, spd. Mid-Continent Pet., Sory 2, A. de los Santos Coy sur, elev 307 ft, top red beds 3812 ft, dr 5540 ft; Sory 3, A. de los Santos Coy sur, woc, td 6054 ft; Sory 4, A. de los Santos Coy sur, lcn. United's J. H. Hutchinson 2, A. de los Santos Coy sur, dr 3175 ft; Hutchinson 3, lcn; Hutchinson 4, lcn (both in A. de los Santos Coy sur.). Hunter Co.'s Fonda 3, A. de los Santos Coy sur, top massive anhydrite 5651 ft, woc td 6151 ft. Fohs Oil Co.'s Mary McReynolds 2, A. de los Santos Coy sur, top red beds 3725 ft, dr 4751 ft shale, hd lime. Gulf's Lizzie Henderson 1, R. Bennington sur, completed as oil well, td 6051 ft; Lizzie Henderson 2, R. Bennington sur, mim. Holcomb & Thomasson's Hilliard & Womack 1, R. Bennington sur, top Henderson sand 6019 ft, coring 6025 ft. Shell's Henderson 1, R. Bennington sur, dr 3748 ft. Turner et al's T. H. Scuddy 1, J. Hanks Hrs. sur, mim.

PANOLA COUNTY—Danciger O&R Co.'s J. W. Tatum 1, Alfred Bissell sur, elev 193 ft, coring 5230 ft. Magnolia Pet. Co.'s E. A. Hull 2, Thos. Applewhite sur, elev 222 ft, dr 7980 ft, sand and shale.

SHELBY COUNTY—Portex Oil Co.'s Pickering Lbr. Co. 3, A. Hanson sur, elev 213 ft, showed gas and distillate, si for gauge, td 5090 ft. Allen et al's George 1, C. C. Tutt sur, dr 1700 ft. Logansport P. L. Co.'s Rushing 1, Mannon Smith sur, sd 3010 ft.

SOUTH TEXAS

SAN ANTONIO DISTRICT

ATASCOCA COUNTY—Brown & Bell's G. C. Atkins 1, BS&F sur No. 3, 4½ miles n Charlotte, lcn.

BASTROP COUNTY—J. W. Bibb et al's O. B. Lentz 1, Freeman Wilkinson sur, 1¼ mi nw Red Rock, drilling 150 ft. Conservative Oil Co.'s Wentland-Bowen 1, Freeman Wilkinson sur, 2 mi nw Red Rock, abnd 2490 ft. H & H Drilling Co.'s Earl C. Erhard No. 1, Hill's Prairie Community, south of Bastrop, waiting on water, will start 9-2-37. Hantho-Nelson's K. M. Litton No. 1, Addison Litton sur, 2½ mi e Cedar Creek, fishing at 2112 ft, lost dogs out of overshot. Marts & Beavans' Gillum No. 1, Thomas Garretson sur No. 19, abnd at 2620 ft. R. Olsen Oil Co.'s Mattie Murchison No. 1, Addison Litton sur, approximate td 1875 ft, swabbed considerable oil, preparing to acidize. Texas Northern Oil Corp.'s John Barton et al No. 1, J. Rogers sur No. 6, abnd.

BEXAR COUNTY—Edna May Oil Co.'s Mrs. C. N. Cassin No. 1, F. Rodriguez sur, acidized with 1500 gals, after plug back and swabbing some oil, td 1349 ft.

CALDWELL COUNTY—B. C. Armstrong et al's Wilson Bell No. 1, Solomon Seal sur, preparing to set casing (5 3/16) at td 2465 ft. Brady Bros. & Pummel's A. B. Jackson No. 1, S. Morris sur, southeast of Salt Flats field, derrick. Chisholm and Associates' F. Lane No. 1, Byrd Lockhart sur No. 8, 1 mi ne Lockhart, dr 1810 ft. Ellmag Oil Corp.'s Willie Popt 1, J. D. Rains sur, ¼ mi ne Salt Flats field, lcn. General Crude Oil Co.'s B. F. Harrison 1, D. Harrow sur, lcn. Lanning and Coffield's W. R. Trammell 1, Guadalupe College sur, dr 150 ft. W. W. Linden's J. H. Compton 1, Pablo Martinez sur, 1 mi nw of Lytton

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Springs field, dr 610 ft. McNeill Pet. Co.'s R. M. Martindale 1, Hector McNeill sur, nw part of county, abnd at 1475 ft. Padua Pet. Corp.'s W. J. Cooper 1, Solomon Seal sur, ru to pump at 2650 ft.

DIMMITT COUNTY — Paul C. Teas & Maryland Corp.' S. E. McKnight 1, I&GN RR sur, blk 13, northwest Carrizo Springs, dr 1250 ft. Wilcox O&G Co.'s Light Ranch (Luminar) 2, sec 29, dr 5890 ft. Wilcox O&G Co.'s Light Ranch (Myssie) 3, sec 13, dr 2175 ft.

EDWARDS COUNTY—Amon G. Carter et al's Frank J. Sweeten Ranch 1, GC&SF sur, dr 4372 ft.

FRIO COUNTY—Amerada Petroleum Corp.'s Mrs. D. D. Harrigan, Salvador Flores sur 306, flowed 74 bbls in 1¼ hours, through open tubing, shut in for 22¾ hours for pressure to build up, casing pressure 300 pounds, tubing pressure 20 pounds, td 6410 ft. H. A. Pagenkopf & L. C. Jamieson's Houston Estate 1, Juan Figuerroa sur, ru, spudding.

GUADALUPE COUNTY — Diamond Half Oil Co.'s E. Bibbs et al 2, Joel D. Robinson sur, td 2516 ft, top Edwards lime 2510 ft, flows by heads, ru to pump. Josey Oil Corp. et al's J. Seeligmann 1, J. W. Williamson sur, dr 1900 ft. W. W. Lincoln et al's F. C. Gabriel 1, Geo. Allen sur, near Staples, lcn.

MAVERICK COUNTY — Wellington Oil Co.'s Chittim Ranch 1, I&GN sur, dr 2610 ft.

MEDINA COUNTY — Gates-Hull-Mead's Emil Kreisle 1, J. La Roche sur 908, dr 486 ft.

LAREDO DISTRICT

DUVAL COUNTY—V. L. Blanchard's Rosa V. de Puig 1, Sweden Farm lots subd, S. Flores grant, td 5411 ft, waiting on cement, set 7-inch casing 5395 ft, plug back, td 5402 ft. Frank Gravis Crude Oil Co. (Penn-Palangana Oil Co.), R. Schallert 1, blk 5, Cain and Smith subd, sur 239, waiting on cement at 360 ft. H. & H. Drilling Co.'s J. F. Welder 1-A, Samuel Alexander sur 102, spudding. Humble O&R Co.'s Mary L. Davidson 1, sec 218, abnd at 3055 ft. Magnolia Pet. Co.'s DCRC 1, sur 259, coring 1588 ft. Penn-Palangana Oil Co. et al's C. K. Gravis 1, sec 254, fishing at 6165 ft, stuck 5100 ft of drill pipe. V. G. Schimmel's E. R. Hagist 3, BBB&C sur, sec 4, spudded. Slaughter & Hugle's J. B. Hunter Est. 1, J. Poitevent sur, 1½ mi s and e Loma Vista prod, lcn. Speed Oil Co.'s Gruy Estate 1, sec 389, 2¾ mi s Rancho Solo field, dr 850 ft. Standard Oil Co. of Kansas' Southland Life Ins. Co. 1, Ball Ranch subd, Agua Poquita gr, drill stem test 4747-75 ft, 14 minutes recovered 690 ft oil, 35 ft mud, 80 pounds pressure, ⅜ inch choke, 7 inch casing at 4747 ft, preparing to drill plugs, td 4775 ft. Standard of Kansas' Gruy Estate 4, sec 154, dr 40 ft. G. Stratton & Baltimore, W. F. Afflerbach 1, center of sur 342, dr ahead. Sun Oil Co.'s G. Rodriguez 2, J. C. King sur, td 2818½- ft, cored 2812½-18 ft, sand and some shale with oil show, ran liner testing. E. Renshaw Thomas Est., E. V. de Pena 1, Small sec 8, 1 mi s Rosita, dr 1700 ft. Tide Water Asso. Oil Co.'s J. R. Foster 2, J. Poitevent sur, abnd at 3035 ft. Tsesmelis & Reese' Juan Canales 2, blk 75, subd of Juan Canales Ranch, San Juan gr, coring in sand 2925 ft.

JIM HOGG COUNTY—Henry M. Brown, Trustee's Sylvester Gutierrez et al 1, sur 579, shut down, changing rig. French Oil Corp.'s M. Vela 1, sur 573, dr 4025 ft.

McMULLEN COUNTY—Adams & Lefevre's Margaret Selman 1, sec 58, moving in rig. Alabama Minerals' Margaret Gordon 1, AB&M sur 217, dr 2013 ft. W. L. Hinds' Douglas W. Rhodes 1, H. Nadler sur, still shut down at 1488 ft. J. T. Lanier's E. R. Hagist 1, sur 481, waiting on orders at 2485 ft. Rowan and Nichols' Douglas W. Rhodes 1, M. F. Lowe sur, dr ahead in sidetracked hole at questionable depth.

STARR COUNTY—Calderoni-James-Follette Francisco Rodriguez 1, sh 56, por 30 J. of Camargo, plug back 1490 ft, testing again, td 1512 ft. John H. Clopton et al's Green 1, sh 85, por 81, J. of Camargo, squeezed off 1100 ft sand, perforation 1608-12 ft with 16 shots, tested 20 million cubic ft gas 24 hrs, shut in, pressure 500 pounds on casing, producing from Frio sand 1609-37 ft. Dean Brothers' Miguel Valadez 1, e 2/7 por 84, dr 1025 ft. J. W. Edwards' Quirino Vela, El Tanque subd, por 84-85, ru. Gilcrease Oil Co.'s Kelsey-Bass 1, sec 11, por 75, J. of Camargo, dr 2472 ft. Gilcrease Oil Co.'s Kelsey-Bass 2, sec 9, por 75-76-77, abnd at 420 ft. K. E. Merren's Starr County Cattle Co. 1-A, Jefferies & Lambeth subd, in por 89, td 5615 ft, tubing sanded up, cleaning out. Henry Mode et al Starr County Cattle Co. No. 1, Jeffries Lambeth subd, por 88, coring 2774 ft. Moss & Heard's S. B. Ricaby 5, por 83, J. of Camargo, coring 1460 ft. Texas Co.'s A. V. Guerra 6A, por 67, J. of Mier, making several barrels of oil per day at 3653 ft. Transwestern Oil Corp.'s T. B. Slick School 1, sur 266 dr stem stuck at 5374 ft.

WEBB COUNTY—Adams and Lefevre, E. Garcia 1, sur 592, 4½ mi s Oilton, ru. N. V. Duncan & Okla. Co. of Texas' Ft. Worth Nat'l Bank 1, sur 466, 3 mi nw of Oilton, ru. French Oil Corp.'s J. M. Garcia Est. No. 3, sur 1121, 1½ mi e Killam field, spudded. J. W. Magee' E. Garcia 1, Henry James subd, dr 1765 ft. E. J. Pearl et al's De La Garza Est. 1, sur 262, abn at 2504 ft. Randon Oil Co.'s Joe C. Palmer 1, sur 474, spudded.

ZAPATA COUNTY—Fansler-Moore-Murray's Gopher Trust Est. 2, sur 6, Fullerton subd, dr 1775 ft. O. W. Killam's A. M. Bruni Est. 2, blk 84, Killam subd, E. V. Borrego gr, abnd at 1670 ft.

CORPUS CHRISTI DISTRICT

BROOKS COUNTY—Mills Bennett Prod. Corp.'s W. W. Jones 1, G. Sanchez sur, dr 5820 ft. Standard of Texas' Mestina O&G Co. 2 (lse. 2), R. G. Salinas sur, waiting on cement at 494 ft.

COLORADO COUNTY—Coyle-Concord Oil Co.'s South 2, I&GN sur 41, no report after drilling 4000 ft.

HIDALGO COUNTY—Dee Davenport et al's Hidalgo County Water & Improvement District 6, spudded. Felmoont Oil Corp. et al's Mayyer & Weill 1, por 47, 4 mi e Sam Fordyce field, abnd at 4515 ft. Gulf States Oil Co.'s Delta Orchards 2, sec 94, Delta Orchards sub, 1 mi w of n end of field, ru. Y & B Oil Co.'s Waite Brothers 1, sh 282, Los Ejidos gr, dr 2807 ft.

JACKSON COUNTY—The Texas Co.'s C. E. Niebuhr, O. S. York sur, shut down 5152 ft, tested salt water in 5100 ft sand.

JIM WELLS COUNTY—Magnolia Pet. Co. et al's A. A. Seeligson 7, Los Jaboncillos sur, ru to dr deeper.

KARNES COUNTY — Dirks Brothers' E. Ruhmann 2, James Johnson sur, complete at 3620 ft, waiting on gauge. Dirks Brothers' E. Ruhmann 3, James Johnson sur, skid on. Ivan Howard's W. Moczygamba 1, E. Seguin sur No. 5, shut down, dr water well.

LIVE OAK COUNTY—Mills Bennett Prod. Co.'s J. W. Nichols 1, Patrick Henry sur, 3 mi nw Three Rivers, dr 1250 ft. Mills Bennett Prod. Co.'s Watson & Shipp, P. Salinas sur, lcn. Charles Hannah, C. H. Wedding 1, Brigida Haughy sur No. 1, dr 710 ft. Bob Holland et al's Matikin 1, A. Glavecke sur No. 1, ¾ mi ne of Ezzell field, dr below sur casing. C. E. Jacobs et al's J. W. Nichols Ranch 1, Simeon Ryan sur, abnd 1645 ft. Petroleum Producers Co.'s Bessie Alexander 1, Louis Ayres sur, will move on 9-6-37. Ranco Oil Corp.'s Fee 1, J. Poitevent sur No. 3, ru. Unit Pet. Co.'s W. O. Nichols 1, in Simon Ryan sur, drilled plugs about 8-28-37.

NUECES COUNTY—Camp Prod. Corp.'s E. Phillip Wardner 1-A, Paso Ancho Abajo and Paso Ancho Ariba surs, drilling 5510 ft. Seaboard Oil Corp. of Delaware's James P. Luby 2, sec 2, Luby subd, dr 4722 ft. United Prod. Corp.'s T. S. Schroeder 1, A. F. de la Fuentes sur, coring shale below 6368 ft. Sam E. Wilson

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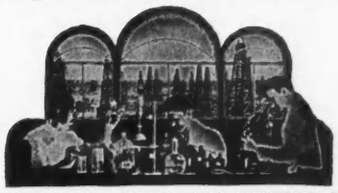

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Jr.'s J. F. Herold 1, Bohemian Colony subd, dr 5865 ft

REFUGIO COUNTY—Wynne Drilling Co.'s J. A. Lambert 1, J. Power & James Hewitson sur, dr 5320 ft.

SAN PATRICIO COUNTY — Buckingham Oil Co.'s Jean Davis 1-C, sec 27, Peterson subd, abnd 7150 ft. Danrey Oil Co.'s Jean Davis 1-A, Wm. Boyd sur, dr ahead around 6705 ft. Plymouth Oil Co.'s J. F. Odem 1-A, Archibald Herron sur, abnd at 6724 ft. F. P. Schwab's H. A. Smith 1, Juan Hart & Sons gr, spudded. Waterbury Oil Corp.'s Jean Davis 1, G. W. Grover sur, ru.

VICTORIA COUNTY—Gulf Oil Corp.'s Mahon & Buehler 1, J. Pointevent No. 2 sur, spudded. Magnolia Pet. Co.'s Willie Beck 2, dr ahead at 1050 ft. Stanolind O. & G. Co.'s Henderson & Pickering 1, E. Benavides sur, set 10¾-in surface csg at 1100 ft, td 1525 ft. Transwestern Oil Co.'s A. M. McFaddin 1, F. Lewers sur, drilling plugs from 9⅝-in csg at 4412 ft.

WILLACY COUNTY—Magnolia Pet. Co.'s F. Armendiaz 1, sh 4 in San Juan de Carricitos gr, ru. Shell Pet. Corp. et al's Yturria Cattle Co. 2, San Juan de Carricitos gr, dr 5050 ft.

TEXAS GULF COAST

BRAZORIA COUNTY—Jack Frazier's Temple Lumber Co. 1, e of Bonney, H&TB No. 25, dr shale 5547 ft; same operator's S. W. Russell 1, ne of Bonney, J. M. Allen sur, lcn. Humble's Munson 1, e of East Columbia, S. Carter sur, abn lcn. Ohio Oil Co.'s Kemper 1, Chocolate Bayou area, H&TB No. 33, abn 7511 ft. Texas Gulf Producing Co.'s Adams 1, Chocolate Bayou area, H&TB No. 40, abn 7508 ft. Pure's Slade 1, Peach Point prospect, S. F. Austin sur, reaming 8398 ft.

CHAMBERS COUNTY—Merit & Ingot Oil Co.'s Wright et al 1, Cedar Bayou area, C. Smith sur, spudded.

COLORADO COUNTY — Coyle-Concord's Mary 2, I&GN No. 41, setting csg 6034 ft.

FT. BEND COUNTY—Research Oil Co.'s Moore 1, ne of Orchard, S. Kennedy sur, dr shale 5660 ft. Humble's Schulze 1, Needville area, R. Hodge sur, dr shale 1151 ft.

HARRIS COUNTY — Superior's Butler 1, Bammel area, J. Ehrhardt sur, testing 6175 ft. West Prod. Co.'s Underwood 1, nw of La Porte, N. Clopper sur, abn 8500 ft. Texas Gulf Prod. Co.'s Moore 1, Aldine area, W. C. R. R. sec 18, dr shale 1489 ft.

LIBERTY COUNTY—J. G. Mayo et al's Gibbs Bros. 1, ne of Davis Hill, J. D. Martinez sur, abn 6020 ft. Humble's Sabine Tram 2, Devers area, M. Whittington sur, dr shale 3150 ft.

MATAGORDA COUNTY — Continental's Hawkins 2, Sheppards Mott area, D. McCarthy sur, dr shale 7930 ft.

NEWTON COUNTY—Houston Oil Co.'s Sabine Tram 1, Bunker Hill prospect, H&TC No. 35, dr shale 4005 ft.

WYOMING

ALBANY COUNTY—Wyco Oil Co.'s Chappell 1, c ne nw 33-21n-76w, pb to 765 ft to test gas shows in Frontier. Chappell 2, ne ne nw 33-21n-76w, set 8¼-in csg at 243 ft. Ohio Oil Co.'s Griffin 1, se sw 24-49n-89w, mim.

BIG HORN COUNTY—Wood-Callahan Oil Co. Ltd.'s Evans-Government 1, ne ne nw 12-49n-91w, pb to test so in Embar at 1800 ft with td at 2300 ft in Madison.

CARBON COUNTY—Ohio Oil Co.'s Wyoming Oil & Gas Co. 1, c se sw 29-27n-89w, still waiting on plugging of old Prairie O. & G. Co. hole 100 ft to southeast.

PREMONT COUNTY—Stanolind Oil & Gas Co.'s Johnson 1, c se se 3-33n-96w, mim.

NATRONA COUNTY — General Petroleum Corporation's Government 1, c nw¼ nw¼ se¼ 21-35n-77w, ru.

NIOBRARA COUNTY—W. A. Maupin et al's Berggren 1, nw 23-35-63w, ru.

SWEETWATER COUNTY—Mountain Fuel Supply Co.'s W. L. Williams 1, se ne 5-12n-95w, mit.

UTAH

GRAND COUNTY—Cane Creek Oil Co.'s Government 1, nw sw 31-26n-21e, dr 200 ft. Old Frank Shafer well, 250 ft from present well, which blew out last week, is still flowing oil and gas with water through csg.

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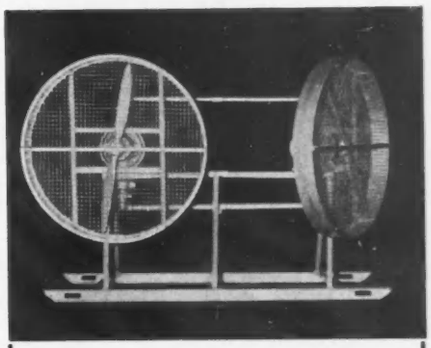

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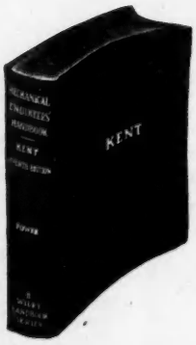

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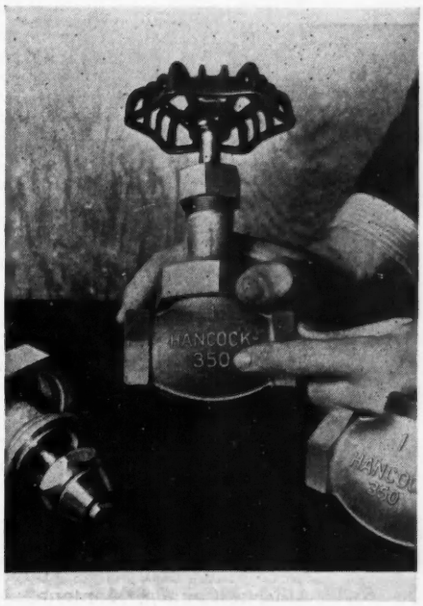

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Etel Rope Clamp Company, Newark, N. J., has placed on the market three sizes of rope clamps, practical for any holding or adjusting operation wherever rope is required.

Etel Rope Clamp

These clamps, made in three sizes ⅛- to ⅜-inch, ⅜- to ½-inch and ½1 to ⅝-inch, are of full size with due allowance made for the end binding used on manila rope. They are made of brass or malleable iron cadmium plated with and without auxiliary spring.

SYNTHETIC OIL-RESISTING HOSE
Manhattan Rubber Manufacturing Company

The Manhattan Rubber Manufacturing Division, Passaic, New Jersey, has developed a synthetic oil-resisting rubber hose that is being used in producing Super-Dreadnaught, Dreadnaught, Grenadier, G.O.P., Rotary hose for drilling in with oil and Paranite G.O.P. Oil Loading and Discharge Hose.

Entirely unaffected by oil and petroleum derivitives, Paranite G.O.P. is a special compound similar to rubber in appearance and physical characteristics. Because it does not soften, swell or flake off as even the best rubber will when exposed to oil, Paranite G.O.P. is used to line hose either in the pure form or combined with oil-resisting rubber in the right amounts, depending upon the severity of the service.

OIL TESTING INSTRUMENTS
American Instrument Company

Availability of a 72-page book entitled "Oil Testing Instruments" and designated as Catalog No. 10-OW is announced by American Instrument Company of Silver Spring, Maryland. It presents information on the latest developments in the company's instruments for testing petroleum and its derivatives, compounds, asphalt, etc.

This Week with the Industry's EQUIPMENT SUPPLIERS

New Sound Movie Features Use and Manufacture of Sucker Rods

Oil Well Supply Company announces completion of its motion picture, "Sucker Rods From Mine to Well," a 16 mm. talkie—showing time 26 minutes. This picture shows not only the processing of sucker rods from the ore mines to the oil fields, but also the handling of the rods in the field. Many close-ups are used in illustrating recommended practices for the care and handling of rods in the field. The chief causes of rod failures are shown by animated diagrams.

"Sucker Rods From Mine to Well" is now available for showing at safety meetings, engineers' clubs, etc. Requests for use of the film can be made through any "Oilwell" representative.

U. S. Rubber Transfers Tipton to New York City

W. A. Tipton, of United States Rubber Products, Inc., was recently transferred from Houston to the headquarters office at 1790 Broadway, New York City, where he has been put in charge of packing sales.

Green Head Bit Names Daniels Export Representative

Green Head Bit & Supply Company, Oklahoma City, announces the appointment of Guy E. Daniels, 30 Rockefeller Plaza, New York City, as its export representative.

Daniels was for 10 years located in Maracaibo, Venezuela, with Shell. While in the purchasing department of that company he spent 9 years in the field which gave him first-hand knowledge of oil field tools and equipment. Before going with Shell he was with Union Oil Company in California.

GUY E. DANIELS
Handling Green Head Exports

International Nickel Expands Technical Service Staff

A. J. Wadhams, vice-president in charge of development and research, The International Nickel Company, Inc., has announced the addition of Wayne Z. Friend to the development and research staff.

Friend will devote most of his time to technical service on corrosion resisting materials, particularly monel, nickel and inconel. His experience has been principally in the petroleum and natural gas industries and covers the production, refining and marketing of petroleum products, natural gas and liquefied petroleum gases.

After graduation from West Virginia University in 1926 with a Master's Degree in Chemical Engineering, Friend engaged in the production and marketing of natural gasoline with Gasoline Recovery Corporation, Charleston, W. Va. During the past seven years he has been associated with Phillips Petroleum Company and, as Chief Technologist of Philgas Department of that company at Detroit, Mich., has been recently engaged in the industrial application of liquefied petroleum gases to heat treating requirements of the automotive and other metal industries. He has been active on Committees of the American Gas Association, National Bottled Gas Association and American Society for Testing Materials.

Several Dowell Officials Touring the Country

N. R. Crawford, manager of Dowell Incorporated, and A. P. Beutel, assistant general manager of The Dow Chemical Company, have returned from a trip to Mexico City and Tampico, Mexico, where they inspected properties of Dowell Sociedad Anomina, Mexican subsidiary of The Dowell Chemical Company.

R. D. Shaw, sales manager for Dowell Incorporated, is on an extended business and pleasure trip. He will inspect the company's operations in Alberta, Canada, Montana, and Wyoming, and together with his family will vacation at Lake Louise, Alberta; Glacier National Park, and Yellow Stone National Park, before returning to his office at Tulsa.

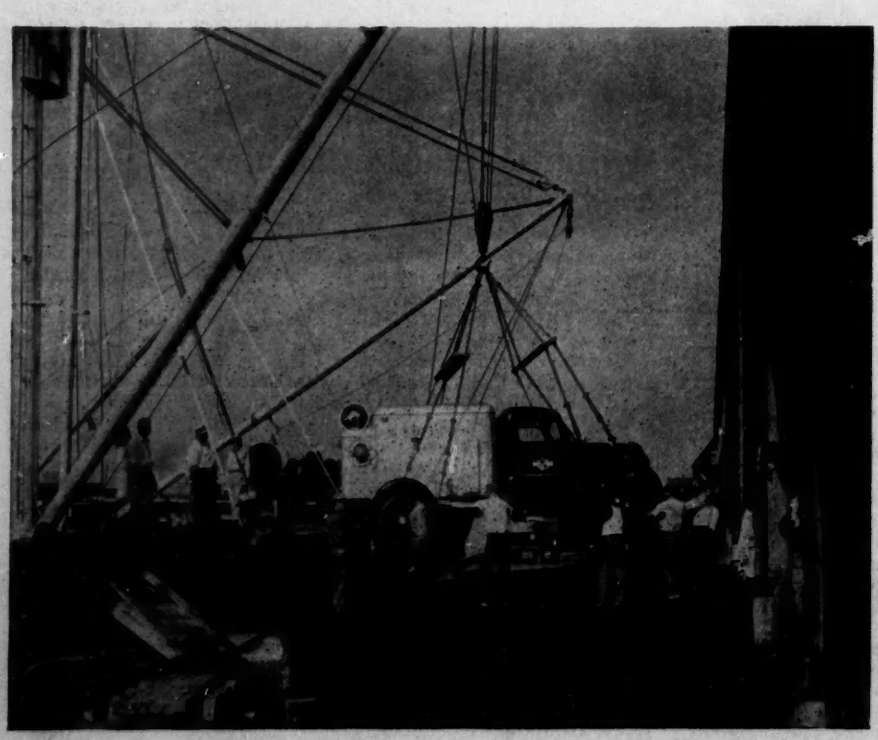
J. Harold Adkison, sales engineer for Dowell Incorporated, has returned from a trip to the Illinois Basin. While there, he spent some time at the company's office in Lawrenceville, Illinois.

R. E. Hilpert Joins Dowell Incorporated

R. E. Hilpert, formerly general superintendent of drilling and production for W. C. McBride, is now with Dowell Incorporated at Midland, Tex.

Raymond Ford Making An Eastern Tour

Raymond E. Ford, district sales manager at Houston for Williamsport Wire Rope Company, was in Williamsport and Bethlehem, Pa., and Chicago, Illinois, the past week.



Picture shows a recording truck being loaded, part of the equipment shipped from New Orleans to Buenos Aires, Argentina. Manufactured in Tulsa by Engineering Laboratories, Inc., this equipment was supplied to Seismograph Service Corporation for work in Argentina, for Yacimientos Petroliferos Fiscales. In addition to the equipment, Seismograph Service Corporation sent two of its men from Tulsa, J. L. Kezeler, observer, and R. P. Begley, shooter, and F. B. Leedy, party chief, from San Fernando, Trinidad, where the organization has two crews working.

S. M. Jones Company Makes Sucker Rod Talking Picture

A number of producers co-operated with the S. M. Jones Company when it brought an expert camera crew and motion picture director to the oil country for the new talking picture, "Progress in Sucker Rods," which has just been completed.

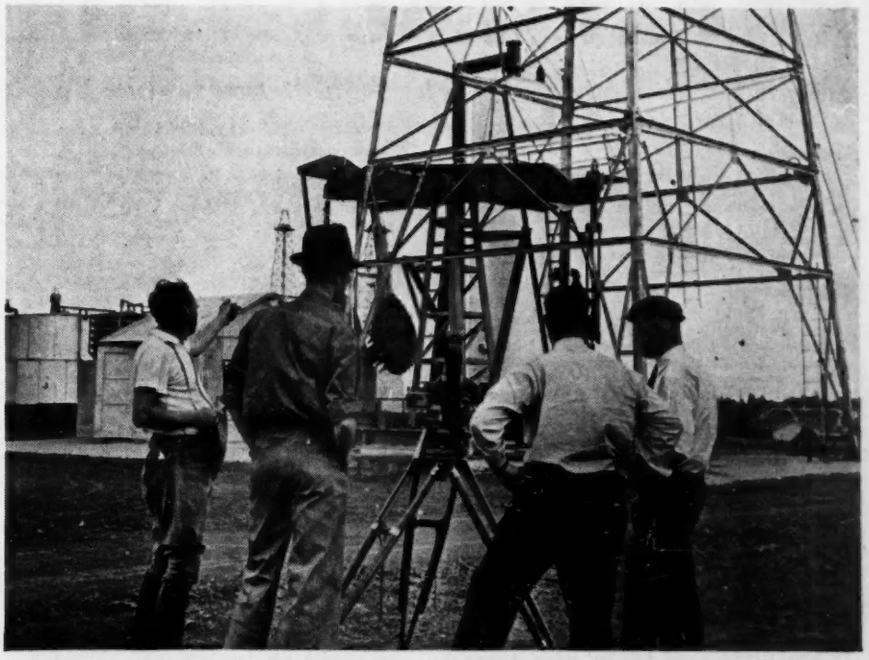
The high spots in this picture, which is scheduled for a number of immediate showings, is the talking picture story of how pumping troubles are studied in order to determine the proper type of sucker rods needed to meet the various pumping conditions.

Typical instances where pumping troubles have been overcome, where rod breaks have been reduced, and production increased are shown on the screen.

The latest metallurgical developments, the value of laboratory analyses, and the engineering studies which produced these results are explained.

In order to illustrate the importance of proper care and handling in the field, a comedy element was introduced. The character "Rodney" a hitch-hiker headed for Hollywood, who gets a job as a member of a rod crew, shows by his antics and mistakes what not to do to a good sucker rod.

Schedules for the showing of this picture may be booked through The S. M. Jones Company, Tulsa Office. The complete film and a portable sound projector of the latest type are available without cost.



Motion picture crew shooting scenes for the Jones new talking picture "Progress in Sucker Rods" which is about to be released.

John Klep Joins Sperry-Sun Organization

John Klep, who for the past three years has been employed in the engineering, sales and research departments of Reed Roller Bit Company, has resigned to accept a position with Sperry Sun Well Surveying Company, and will be located in Houston.

General Tire & Rubber Company Opens New Plant at Wabash

Operations at the newly opened plant of the mechanical goods division of The General Tire & Rubber Company at Wabash, Indiana, are rapidly gaining momentum, and by the first of the year it is expected that the present operating force will be tripled, according to W. O'Neil, president.

Installation of machinery is still being made, although the plant has been operating on a limited scale for the past several months. When completely equipped and in full operation, it is expected that the plant will be one of the most complete and modern in the country.

The first rubber was produced in the Wabash plant, experimentally, on March 8, 1937, after 5 months had been spent in reconditioning the buildings and installing machinery, under the direction of Howard M. Dodge, general manager of the plant. Machinery and equipment now occupy the major part of the 228,669 square feet of gross floor area. The buildings, of brick and steel construction, are located on a 30-acre tract of land adjacent to the main line of the Wabash Railroad.

Aerial view of mechanical goods division plant and office, General Tire & Rubber Company, Wabash, Indiana.

Richard Seipt Sales Manager for Laminated Shim Company

Richard Seipt has been appointed sales manager for Laminated Shim Company, Inc., Long Island City, New York.

Seipt has been associated with the sales department of the company for the past two years. Previously he was connected with John Wood Manufacturing Company as a sales engineer.

Drillers Supply Company Opens Trapp Store

Drillers Supply Company, Wichita, Kansas, announces opening of a new store in Trapp field, southern Russell County. A complete line of supplies will be carried, and the store will be open 24 hours each day. Location is just southeast of Trapp production, where the south road of the field joins the Susank road about 4 miles north of that town.

J. W. Massey Representing Rector at Corpus Christi

Rector Well Equipment Company, Fort Worth, Texas, announces the appointment of J. W. Massey as field engineer doing sales and service work in the South Texas district. Massey was formerly a member of the staff of Laughlin, Simmons & Company. With headquarters in Corpus Christi, he will assist C. L. Cron, division manager of sales in the Gulf Coast territory.

J. W. MASSEY
With Rector in South Texas

CATALOGS...BULLETINS

Helpful Publications Which Manufacturers Will Be Glad to Send Free for the Asking

Ditcher

Buckeye Traction Ditcher Company, Findlay, Ohio, has issued two bulletins covering two of its new products. The first describes in detail the Model 120 service ditcher. The second the Buckeye Model 12 service ditcher, a new small size model for hard-to-get-at places.

Mud Screen

Vernon Tool Company, Ltd., Los Angeles, has issued Bulletin No. 101 which illustrates and describes the new McNeely vibrating mud screen in detail. Copies may be obtained from Vernon Tool Company, Ltd., 2740 East 37th Street, Los Angeles, California, or McNeely Materials Company, 2935 Jensen Drive, Houston, Texas.

Roller Chain and Sprocket Data

Roller Chain and Sprocket Catalog No. 607 has just been published by Diamond Chain & Manufacturing Company, Indianapolis. This 96-page book contains complete data and prices on standard roller chains and list prices on stock and made-to-order sprockets. The information covers power transmission capacities and chain selections for the usual drives.

Non-Sparking Tools

The Beryllium Corporation of Pennsylvania, Reading, Pennsylvania, has just issued a piece of literature covering the line of Non-Sparking Beryllium Copper Tools, entitled "Safeguarding Lives and Property."

"Instant Death to Any Fire"

"Instant Death to any Fire" is the title of a new illustrated booklet describing the latest portable equipment available for extinguishing fires with Lux (CO_2) snow and gas. Design improvements made early in 1937 are included in this pamphlet which is now being distributed by Walter Kidde & Company, West Street, Bloomfield, New Jersey.

American Pipe Manual

American Cast Iron Pipe Company, Birmingham, Alabama, has recently issued an attractively bound in semi-flexible leather covers, the Tenth Edition of the American Pipe Manual.

Containing 205 pages, this latest edition of the Manual covers several products now listed for the first time, including 2-inch cast iron pipe (regular b&s, prepared joint, and mechanical joint), 2-inch cast iron fittings, mono-cast doublex simplex pipe, doublex simplex split sleeves, and split belt sleeves, the doublex simplex river crossing joint, the molox doublex simplex joint, molox ball joint pipe, cement-lined pipe and fittings (with extensive data and specifications), mono-cast well tubing and casing, and monoloy threaded cast iron pipe.

The Tenth Edition of the manual is profusely illustrated with installation photographs and step-by-step action photographs showing assembly of mechanical joints. For many years a favorite source of technical information for users of cast iron pipe, this new edition promises to be the most popular yet issued. Copies will be sent free on request to any office of American Cast Iron Pipe Company.

Furnace Bottom Refractory

Quigley Company, 56 West 45th Street, New York City, has ready for distribution a bulletin describing the "Hearthe Crete" furnace bottom refractory.

Sucker Rods

Bethlehem Steel Company, Bethlehem, Pennsylvania, recently issued a folder describing its A.P.I. normalized sucker rod. The folder is ready for free distribution.

Measuring Rules

The Lufkin Rule Company, Saginaw, Michigan, has issued a light weight, pocket size booklet showing measuring tapes and rules of only such patterns as are used by engineers, surveyors, road builders and the oil industry. It contains also a page devoted to tension and temperature standards, standardization, etc.

Inhalators

Mines Safety Appliance Company, Pittsburgh, Pennsylvania, has issued a new bulletin describing the H-H inhalator, used in the successful resuscitation of victims of carbon monoxide poisoning, gas asphyxia, electrc shock, drowning and other emergencies. Copies of this new bulletin are now available.

Hard-Facing

A new and more complete edition of the booklet, "Hard-Facing with Haynes Stellite Products," is now being issued free by Haynes Stellite Company, Kokomo, Indiana. This booklet describes over 500 applications of the hard-facing process. New sections present information concerning special Haynes Stellite J-Metal cutting tools and an improved welding technique for fabrication of equipment employing the corrosion-resistant Hastelloy alloys. A number of examples of hard-facing automotive and aircraft valves, and valve seat inserts, and the use of Haynes Stellite trim for high-temperature, high-pressure steam valves, are now also described in detail.

Forged Steel Flanges

Kropp Forge Company, Chicago, has ready for distribution a bulletin describing its full line of forged steel stock flanges, which includes boiler, tank, welding, marine, companion, offset, horseshoe, high hub, spud, blind and reduction flanges.

Vibrating Mud Screen

Link-Belt Company, Chicago, recently issued an eight-page folder describing the vibrating mud screen it manufactures. The folder is ready for free distribution.

Steam Pumps

Fairbanks, Morse & Company, 900 S. Wabash, Chicago, is describing in its Bulletin 6205 steam pumps suitable for a wide range of applications. Numerous refinements in design and construction are described in detail.

Neoprene

E. I. Dupont de Nemours & Company, Wilmington, Delaware, has published a handbook describing in detail, Neoprene, material with rubberlike properties yet one that resists the deteriorating effects of oil, heat, sunlight, chemicals and oxidation. This presentation considers separately the effects of the various types of oils, acids, sunlight, heat and other forces which result in the rapid deterioration of rubber products and indicates the type of service that may be expected with a similar part of Neoprene.

Specific applications of Neoprene, including hose, electrical cable, molded parts extruding material, sheet goods and gaskets are also described, with data for reasons for the use of Neoprene in these applications. Of special interest is a summary of the method of making Neoprene and its chemical composition.

Bearings

Norma-Hoffmann Bearings Corporation, Stamford, Conn., has just issued a new catalog—F-958—describing its complete line of precision ball, roller and thrust bearings. This is a book of 84 pages, with cover, of standard 8½x11 size. It includes tabulated data on sizes, dimensions and load ratings of 108 distinct series of precision bearings, embracing over 3000 catalogued sizes. Valuable engineering data are also presented: including cross-sectional drawings of typical applications of bearings of various types; full bearing tolerances; instructions for mounting, lubrication and protection; recommended dimensions of housings, shafts and shaft shoulders. In addition to the standard types listed, a number of the standard precision bearings and ultra-precision bearings developed for special and unusual purposes are shown in cross-section.

Fire Brick

Johns-Manville, New York, has illustrated 12 of the modern types of industrial furnaces for which the new JM-20 insulating brick has been developed in a new piece of literature entitled "Lower Furnace Operating Costs With Johns-Manville JM-20 Insulating Brick." These furnace drawings show clearly the application of this new insulating brick to each of the twelve different types.

One of the most useful features of this literature is a table giving the heat losses transmitted through fire brick walls bare and through fire brick walls insulated with JM-20 Brick. This table includes data on 27 different furnace wall constructions, representing virtually every practical combination of refractory and insulating brick.

Also defined are the physical properties of this brick, which is designed for use behind refractory walls in furnaces and other types of high temperature industrial equipment or for direct exposure at temperatures up to 2000°F. wherever there is no flame impingment, slag action, or mechanical abrasion.

Air Filter

Air-Maze Corporation, 812 Huron Road, Cleveland, Ohio, has issued a new catalog No. NIND-37 featuring its air filters for all fields of application.

Arc Welding Handbook

The Lincoln Electric Company, Cleveland, Ohio, has just published the Fourth edition, Procedure Handbook of Arc Welding Design and Practice. It includes the latest weld symbols adopted by the American Welding Society in May and a new introduction to part six, "Designing for Arc Welded Steel Construction of Machinery" The addition of the new material, included at this time rather than being deferred until publication of the fifth edition, is in line with a policy of supplying the arc welding industry the latest and most important information through the medium of the Handbook. The book is the recognized authority on arc welding and its widespread acceptance is indicated by the fact that its sale has exceeded 40,000 copies. This is an unusually high figure for a technical handbook.

The new weld symbols occupy sixteen pages in the reprinted Handbook. The symbols are reproduced in toto as adopted by the Welding Society. The symbols are ideographic and their use, as applied to welded design drawings, is fully explained. In addition to the symbols themselves, an example is given of how the symbols are actually applied in producing a welded design.

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(Address manufacturer direct)

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Please send me, without obligation, free booklet described in September 6 issue of THE OIL WEEKLY.

NAME.....

ADDRESS.....

Squeaks from the Bull Wheel

Generous

"I hope you appreciate that in marrying my daughter you are getting a very big-hearted and generous girl."

Young Man—"I do, sir. And I hope that she has acquired those fine qualifications from her father."

Very Considerate

"It was considerate of Jones to buy his wife a new washing machine."

"Sure was! The old one made so much noise he couldn't sleep."

By All Means

"I think I'll go downstairs and send Nancy's young man home."

Mama: "Now, Elmer, remember the way we used to court."

"I hadn't thought of that. I know darn well I'd better go down and send him home."

Sought After

"My son went to the United States 10 years ago to make his fortune."

"And what is he worth now?"

"I really don't know for certain, but the state of New York is offering $20,000 for information about him."

How She Knew

The trial had reached a stage where the defendant's wife was allowed to testify in an attempt to establish an alibi.

"You are positive you know where your husband was on the night the crime was committed?" asked the prosecutor.

"Well, all I can say," replied the good woman, "is that if I didn't know, then I busted a good rolling-pin over the head of an innocent man."

Less Sentiment

"He said he would lay the earth at my feet."

"Yes, it sounds good, but it is not practical. You already have the earth at your feet. What you want is a house over your head!"

Application

A negro approached the door of a suburban home and was met by the wife of the household; "Pardon me madam, is you de hostess?" Being informed that she was, he inquired if the host was home. Expressing disappointment at the host's being away he said, "Dats too bad as I wished conversation with him about the care of his domain, I is not only superfine in de care of de flora but Ise also superfine in the housekeeping line as I follows Emily Post, you know she's de tops in ettiket."

Smothering a smile, the lady inquired as to the charges for his servies. "My filosify in dat matter is live and let live—, dere's been quite a depletion in de currency lately and I lets the Host and Hostess decide dat among emselves. In case dere's incompatibility between um, I usually takes what I can gets and, like a child Ise satisfied."

Might Have Been Quints

Father: "Aren't you glad now that you prayed for a baby sister?

Son (after viewing his twin baby sisters): "Yes; and aren't you glad I quit when I did?

Don't Miss That

How did you like your trip abroad? Well, I liked Paris, London, and Rome, but the best part of the whole thing was the trip over. Don't miss that, whatever you do, if you ever go to Europe.

Round One

The professor rapped on his desk and shouted:

"Gentlemen—order!" The entire class yelled: "Beer!"

A Necessary Asset

"Why do you spend so much time on the crease of your pants?" asked the rural father of his college son.

"It is very important, Dad, not to wear baggy trousers," he said.

"Important, is it? Did you ever see a statue of a famous man who didn't wear baggy trousers?"

Some Dame!

The new "stenog" looked like a million dollars. "Class" was written all over her. The office force in accord acclaimed her, "Some Dame!"

Then she opened her velvet lips and said to the office boy: "Say, Bozo, ain't there no carbon paper around this dump?"

Met Half Way

"How much of your salary do you take home to your wife each pay day?"

"None of it."

"How's that?"

"She meets me at the gate and takes it home herself."

P.W.A.

"Say, foreman, will you please give me a shovel? I'm the only one in the gang who ain't got one."

"Don't you know that if you ain't got a shovel you don't have to dig?"

"Yeah, I know that, but all the rest of the guys have something to lean on and I have to stand up."

Not Necessary

"Did you tell your wife everything you did while she was away?"

"No, the neighbors attended to that."

Full Qualifications

"Are you sure you are qualified to lead a jazz orchestra?"

"Absolutely. I've had two nervous breakdowns, was shell-shocked in France and I live in an apartment above a family with 12 noisy children."

Much Easier

"I've been thinking, my son, of retiring next year and leaving you to manage the business."

"There's no hurry, is there, dad? You go ahead and work a few more years and we can both retire together."

A WEED WILL GROW IN A DAY

It takes 3 years TO GROW AN ORCHID!

Over fifteen years experience has gone into the perfection of the MILLER Sand Pump—the reason it is the fastest and most economical method of cleaning out sand and sediment from wells. Increase your production with a MILLER—first choice throughout the world.

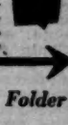
The MILLER is made in diameters of 2½, 3, 3½, 4, 4¼, 5, 5½, 7 and 9 inches and lengths of 20, 25 and 30 feet. 5/32-inch wall thickness in REGULAR Type, ¼-inch wall tubes HEAVY Type Sand Pumps.

INTERCHANGEABLE BOTTOMS
To Meet Every Condition

● BAILER BOTTOM
With the Bailer Bottom installed the MILLER is quickly changed to a Bailer giving you a combination of either Bailer or a Sand Pump in one tool.

● SAND BOTTOM
Used when tools are run and when well is shot to quickly remove loose material.

● STAR BOTTOM
Used for cutting the sand loose.



● CHISEL BOTTOM
(In Pump)
With this bottom tightly packed sand can be easily broken in small pieces so it can be picked up in the pump.

Write for Descriptive Folder and Price List

See Page 1186 COMPOSITE CATALOG

MILLER Sand Pump Co.

General Offices and Shop, Box 4516
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Branch Shops and Offices:
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The Kennedy Valve Manufacturing Co.	—
Kerotest Manufacturing Co.	—
Kibele Manufacturing Co.	—
Kilby Car and Foundry Co.	90
Koppers Co.	—
Landis Machine Co.	7
The Lane-Wells Co.	—
Larkin Packer Co.	Third Cover
The Layne & Bowler Co.	—
Lenox Hotel	—
A. Leschen & Sons Rope Co.	—
The Lincoln Electric Co.	—
Link Belt Co.	—
Lone Star Cement Corp.	29
Lord Baltimore Hotel	—
Lucey Boiler & Manufacturing Corp.	—
Neal Lucey Co.	—
Ludlow Valve Manufacturing Co.	85
Lufkin Foundry & Machine Co.	—
MacClatchie Manufacturing Co.	—
McAlpin Hotel	—
McCullough Tool Co.	—
Maintenance Engineering Corp.	6
D. S. Mair Machinery Corp.	—
Maloney Tank Manufacturing Co.	—
Manhattan Rubber Division	—
F. G. Masquelette & Co.	—
Martin-Decker Corp.	—
Mayes Brothers, Inc.	—
McIntosh & Seymour Corp.	—
The Medart Co.	—
Merco Nordstrom Valve Co.	—
Metric Metal Works	—
Midco Bailer Co.	—
Miller Sand Pump Co.	97
Mission Manufacturing Co.	23
Lee C. Moore & Co.	—
Muskogee Iron Works	—
National Bank of Tulsa	—
The National Supply Co. of Delaware	27
National Tank Co.	—
National Tube Co.	71
Naylor Pipe Co.	—
The New Deal Specialty Co.	81
New Weston Hotel	—
Norma-Hoffmann Bearings Corp.	—
Norvell-Wilder Supply Co.	45
Walter O'Bannon Co.	—
O.C.S. Manufacturing Co.	—
Oil Center Tool Co.	—
Oil City Brass Works	—
Oil Well Supply Co.	35
Oil-World Exposition, Inc.	—
O. K. Machine & Manufacturing Co.	—
Oklahoma Portland Cement Co.	—
Osage Metal Co.	—
Otis Pressure Control	—
Pacific Pump Works	—
The Parkersburg Rig & Reel Co.	8
Patterson-Ballagh Corp.	67
Pelican Well Tool & Supply Co.	79
B. E. Perkins	—
Petroleum Electric Power Club	61
Petroleum Rectifying Co. of California	43
Petty Geophysical Engineering Co.	—
The Pierce Governor Co.	—
Pittsburgh Equitable Meter Co.	—
Pittsburgh Steel Co.	31
Portable Rig Co.	—
Preformed Wire Rope	—
Reading-Pratt & Cady Co.	—
Rector Well Equipment Co.	—
Reed Roller Bit Co.	36-37
Joseph Reid Gas Engine Co.	—
The Republic Rubber Co.	—
Republic Steel Corp.	—
Rice Hotel	—
R-F Electrical Co.	—
Rieber Laboratories	—
The Ridge Tool Co.	92
Rollway Bearing Co.	—
Dewey T. Ross Engineering Corp.	—
Royal Manufacturing Co.	—
Ryder Scott Co.	—
San Jacinto Inn	—
Jack A. Schley	90
Schlumberger Well Surveying Corp.	—
Second National Bank	—
Seismic Exploration, Inc.	—
Shaffer Specialty Co.	—
Shaffer Tool Works	—
Shell	—
Sinclair Refining Co.	—
SKF Industries, Inc.	—
A. O. Smith Corp.	—
E. M. Smith Co.	—
Howard Smith Co.	—
Nowery J. Smith Supply Co.	—
South Chester Tube Co.	—
Southern Engine & Pump Co.	—
Southern Pacific Lines	—
Southwestern Gas & Electric Co.	—
Spang & Co.	50
Spang, Chalfant & Co.	—
Sperry-Sun Well Surveying Co.	78
Standard Pressed Steel Co.	33
Stanley Tools	—
Star Drilling Machine Co.	—
A. J. Stephens Co.	—
Stevens Hotel	—
Sullivan Machinery Co.	—
The Sullivan Co.	—
Templeton, Kenly & Co.	90
Texaco Development Corp.	—
Texas Electric Service Co.	—
Texas Electric Steel Casting Co.	—
Texas Iron Works	—
Texas Rubber & Specialty Co.	—
Texas Steel Co.	—
Thermoid Rubber Co.	—
Thornhill-Craver Co.	—
Thornton Tandem Co.	—
The Timken Roller Bearing Co.	—
Titusville Iron Works	—
Tnemec Co.	—
Tretolite Co.	—
Trimont Manufacturing Co.	—
Trinity Portland Cement Co.	—
Twin-Seat Valve Co.	—
Union Carbide & Carbon Corp.	—
Union Wire Rope Co.	—
United Gas System	—
United States Heat Treating Co.	25
United States Rubber Co.	—
United States Steel Corp.	35 and 71
United Supply & Manufacturing Co.	—
Universal Atlas Cement Co.	—
Wailes Dove-Hermiston Corp.	—
The Watson-Stillman Co.	87
Waukesha Motor Co.	—
Westinghouse Electric & Mfg. Co.	—
Wheeling Steel Corp.	—
The Wheland Co.	—
O. C. Whitaker, Inc.	—
Wickwire Spencer Steel Co.	—
J. H. Williams & Co.	—
Williams Brothers, Inc.	—
Williamsport Wire Rope Co.	—
K. R. Wilson	—
Wilson-Snyder Manufacturing Co.	—
Wilson Manufacturing Co.	—
Wilson Supply Co.	—
W-K-M Co.	—
The Wood Shovel & Tool Co.	—
Worthington Pump & Machinery Corp.	—
Yale & Towne Manufacturing Co.	—
Young Engine Corp.	—
Young Radiator Corp.	—
Youngstown Sheet & Tube Co.	—

"That's the only way to guarantee customers a perfect fitting Casing Shoe!"

FIRST of all, Larkin Casing Shoes are made from the highest grade Steel obtainable, carefully forged to the correct size, with no seams or welds, then properly heat-treated to toughen without making them brittle.

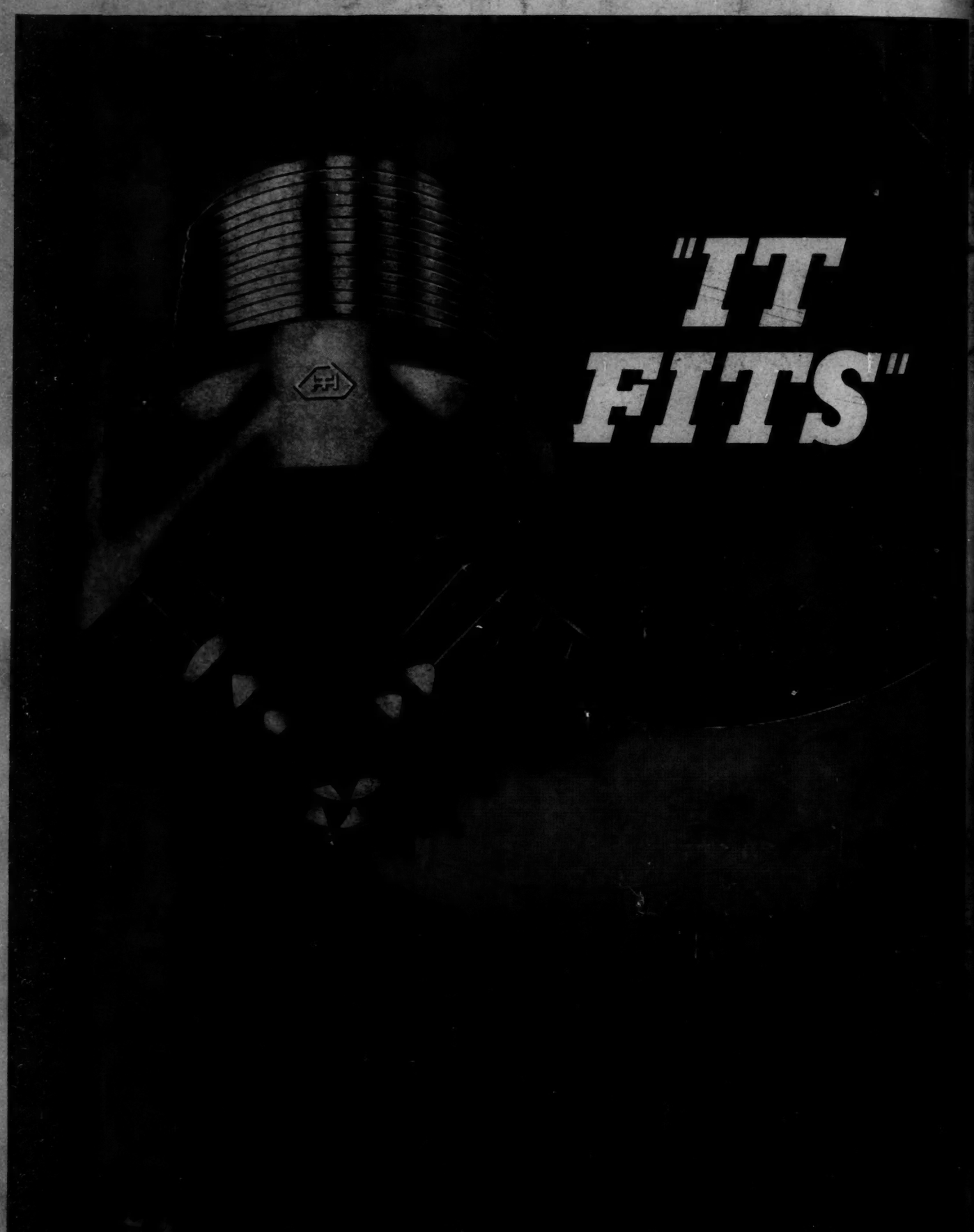
But the thing of which we are the proudest—the feature which contributes most to the successful performance of Larkin Casing Shoes—is their extremely accurate *machining*. The threads are cut with a thread hob (as shown above), which guarantees a perfect thread both as to pitch and taper.

Larkin Casing Shoes do not tighten on a shoulder but on the threads; this assures a perfect fit of the pipe even though some pipe has been "shopped."

Lastly, every Larkin "Engineered" Casing Shoe is rigidly inspected by an experienced inspector; that's why, through 20 years of manufacture we've had only 2 complaints. And that's why LARKIN have made 60% of all the casing shoes used in these same 20 years!

LARKIN PACKER COMPANY, INC., ST. LOUIS, U. S. A.

LARKIN PACKER CO.


"IT
FITS"

COCHRAN
JOHN H. GIBSON
BLOCK D
YOAKUM
BENNETT

STATE
CAPITOL
LAND
ASHER
TAYLOR
HOCKLEY
R. M. THOMPSON
BLOCK A
E.L.&R.R.R. CO.
BLK. P
BLK. D-9
BLK. JS
BLK. AK
BLK. CB
C.&M.R.R. CO.
DUGGAN
SLAUGHTER
PUBLIC SCHOOL LAND
H. E. & W. T. R. R. CO.
BLOCK C
BLK. E
BLK. DB
C. & M.
R. R. CO.
BLOCK D
BLK. D14
BLOCK
D12
TERRY
BLOCK T
BLOCK 4X
BLOCK M
JOHN H. GIBSON
BLK. C26
BLOCK C27
BLK. C-18
C39

STATE CAPITOL LAND

R. M. THOMPSON

BLOCK A

ABNER TAYLOR

HOCKLEY

CHRAN

DUGGAN

SLAUGHTER

E. L. & R. R. R. CO.

BLK. E BLK. D8

C & M R. R. CO.

BLOCK D8

BLK. D14

JOHN H. GIBSON

BLOCK D

AKUM

BENNETT

DALLAS & WICHITA R. R. CO.

TERRY

C & S R.R.

BLOCK T

BLOCK 4X

BLOCK M

JOHN H. GIBSON BLK. C38

BLOCK D8

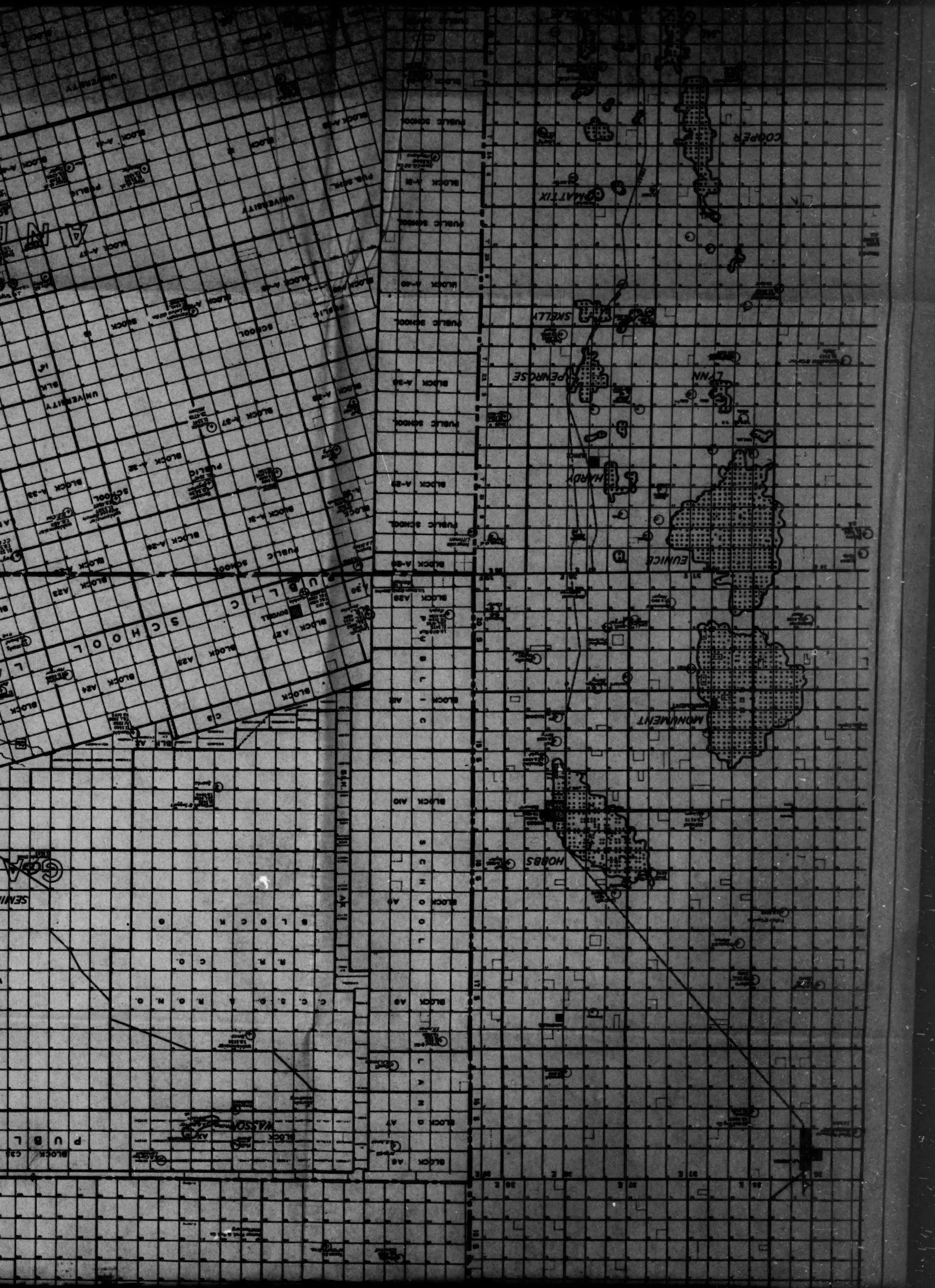
PUBLIC SCHOOL LAND

BLK. C38

SUPPLEMENT TO
THE OIL WEEKLY, JULY 19, 1937

LUBBOCK

LYNN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PFLUGERVILLE
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BLOCK
ALBAUGH
TAYLOR COUNTY
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ANDREWS
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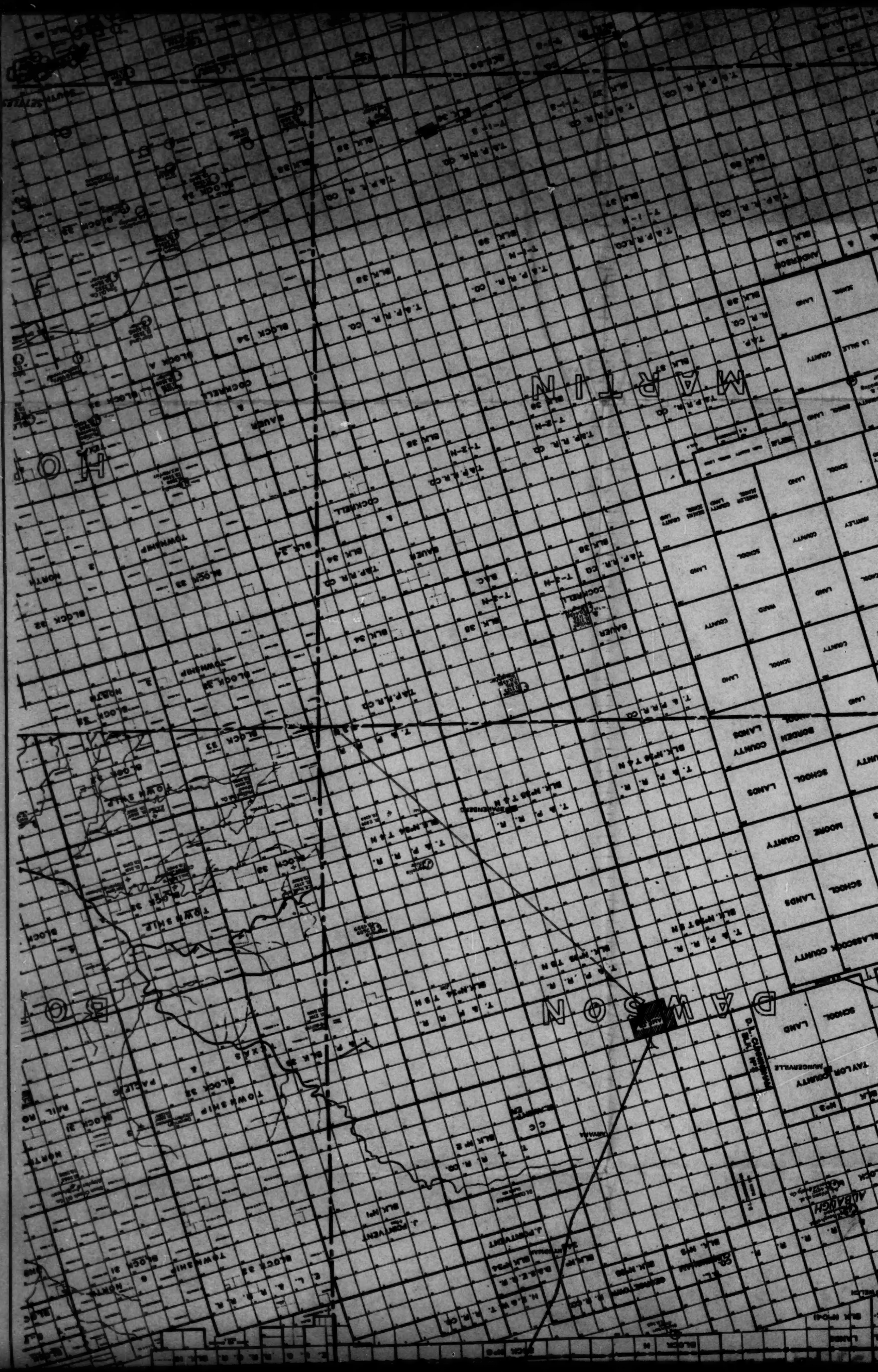
COUNTY
KIRK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COCHRELL
BAUER
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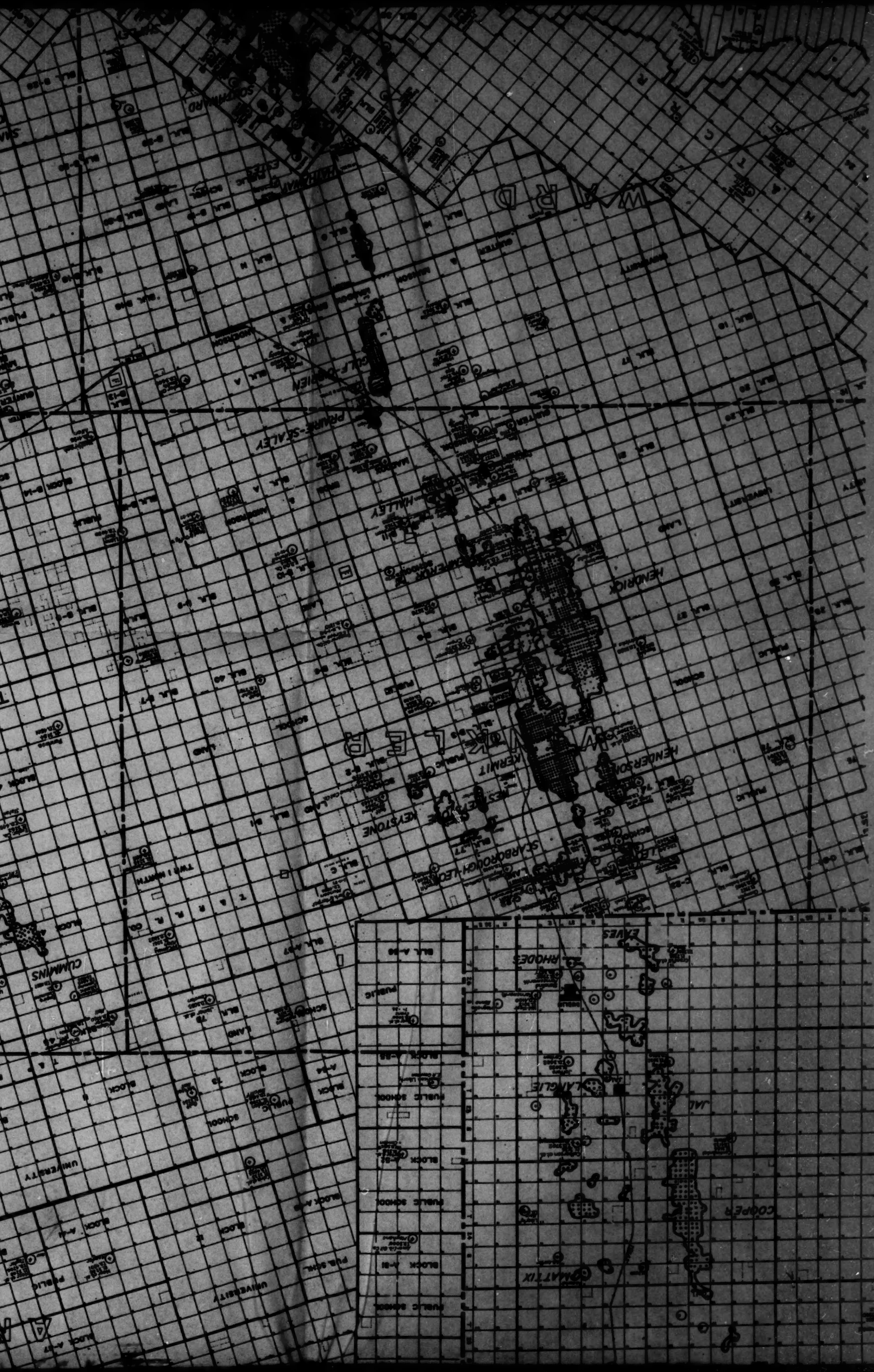
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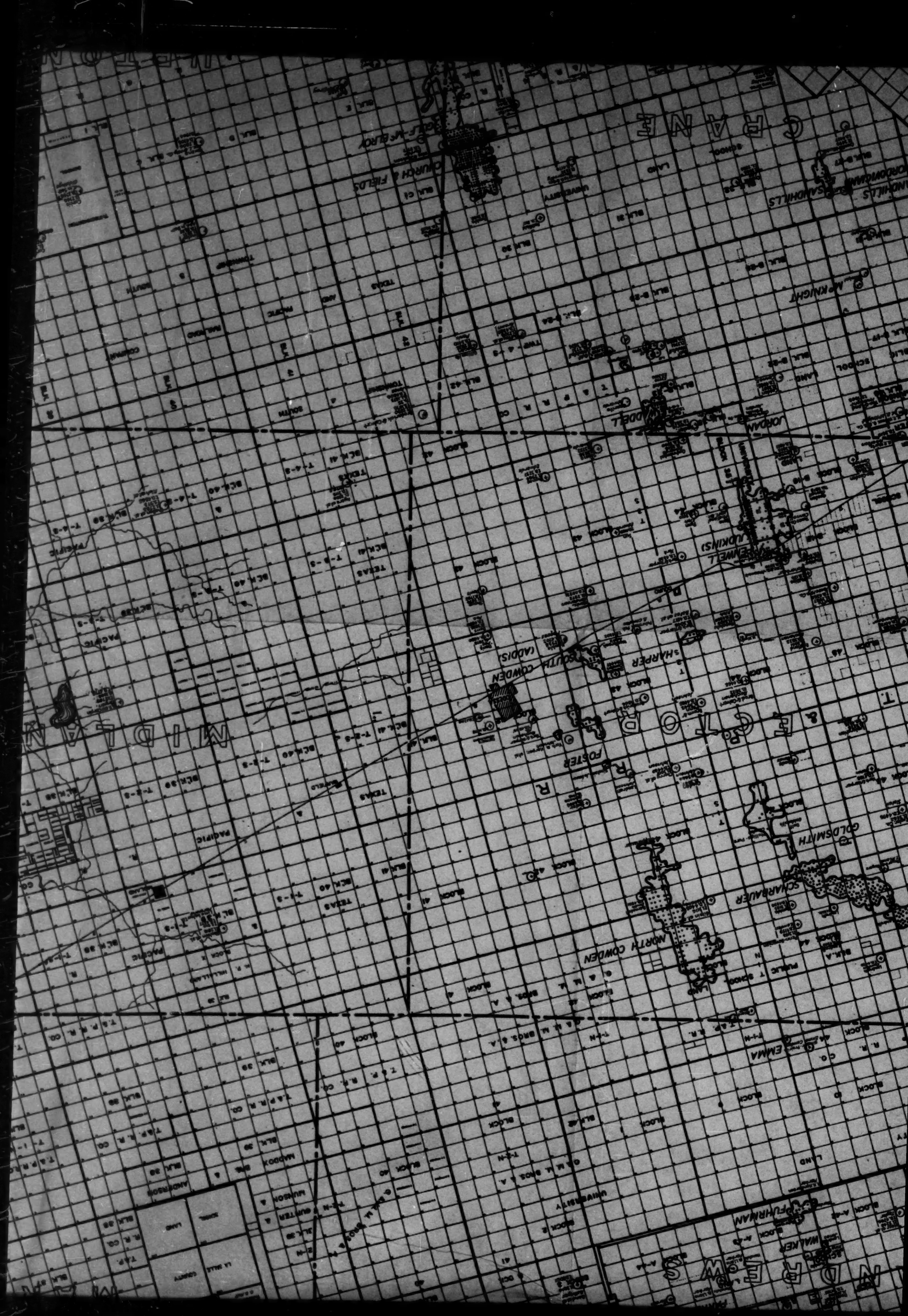
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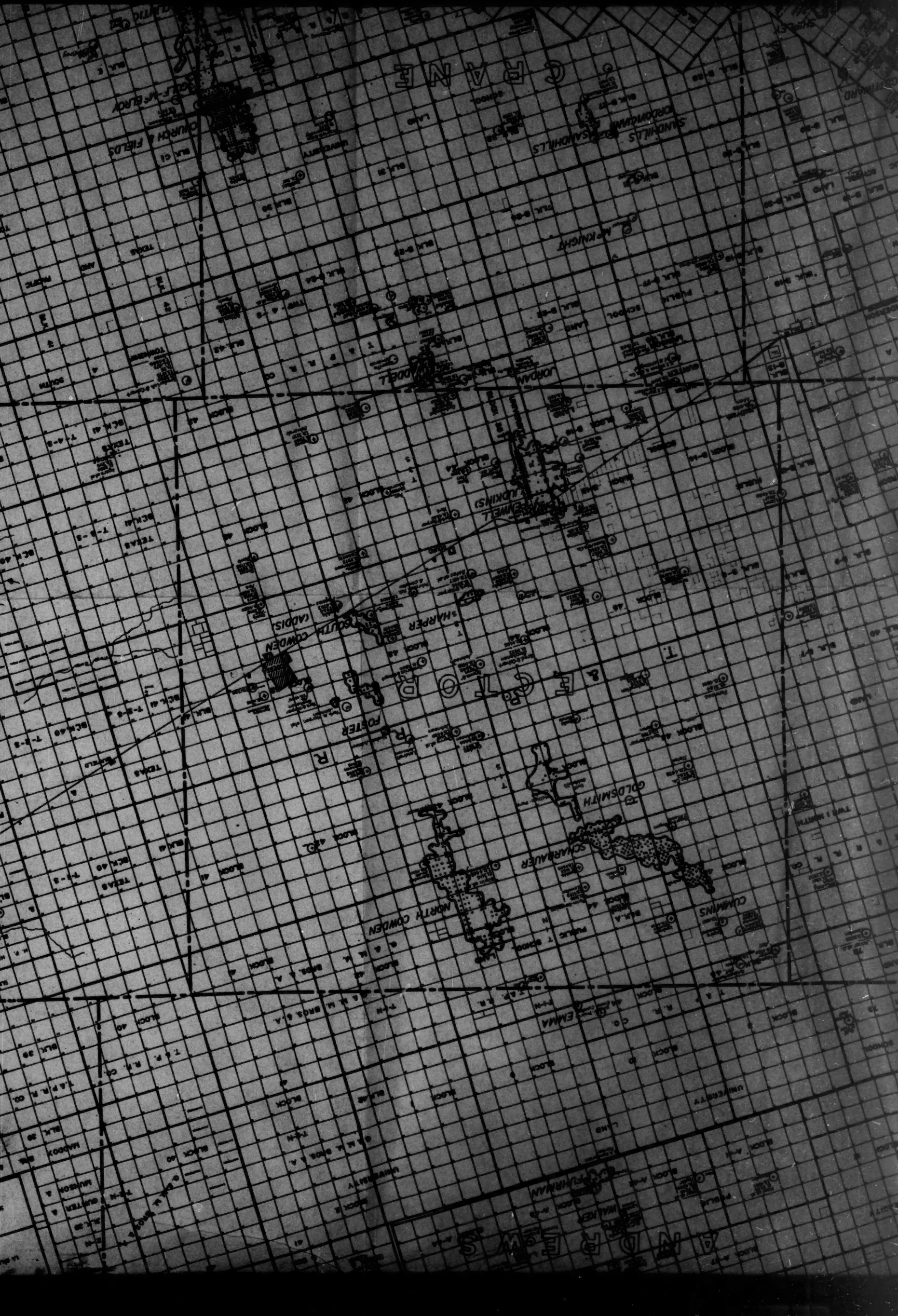
CRANE
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NORTH COWDEN
SCHARBAUER
CLAWSON
EMMA
GOLDSMITH
FOSTER
SHARPER
JORDAN
MIDKNIGHT
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UNIVERSITY
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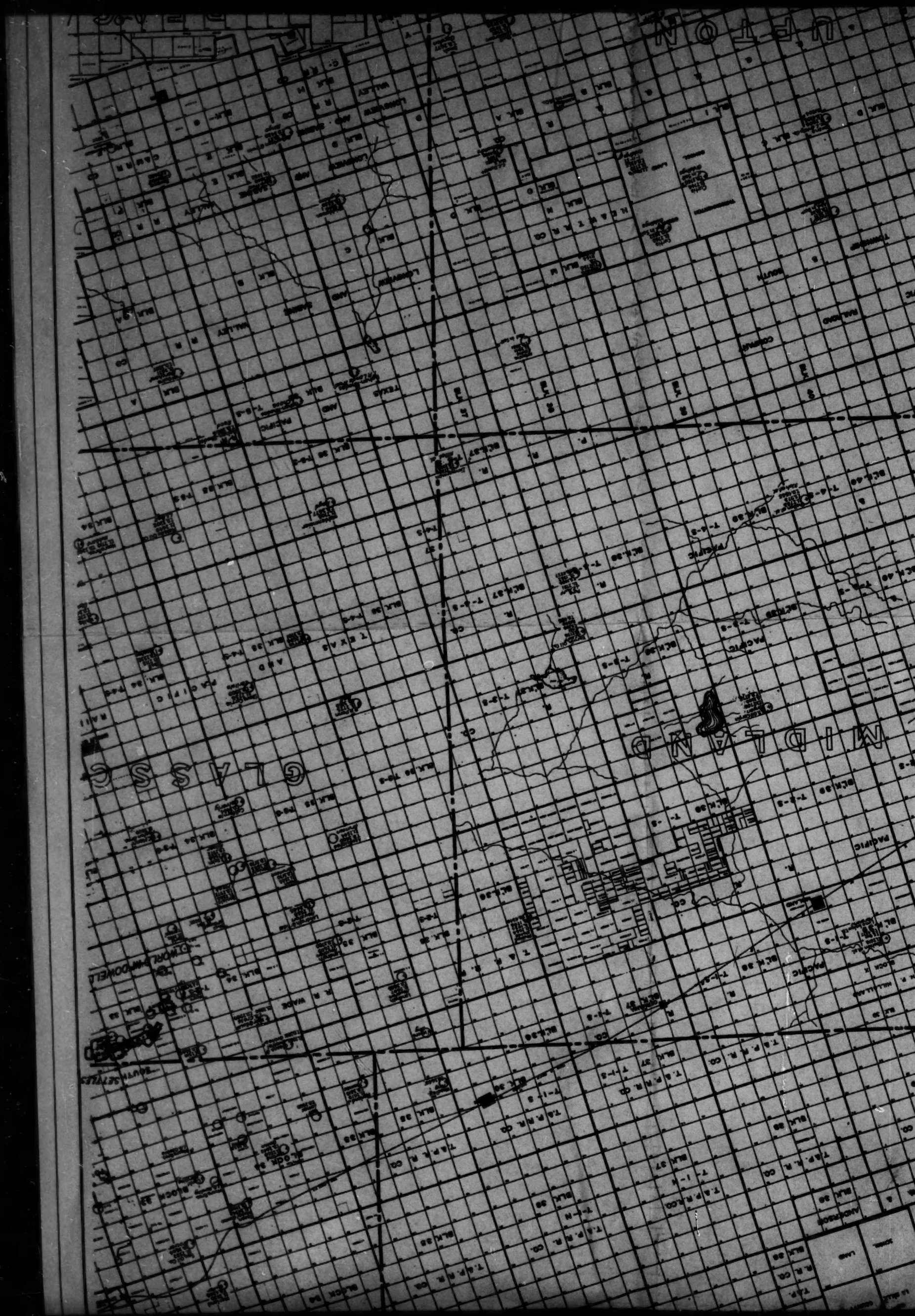
MIDLAND
MIDLAND

PRAIRIE-SEALEY
GULF-DARBIEN
WARD
HATHAWAY
ESTES
SOUTHWARD
SHIPLEY
KETTERVILLE
GRAND FALLS
PECOS VALLEY
BENNETT
SANDHILL
T. & P. R. R.
TOWNSHIP
BLOCK
PUBLIC SCHOOL
LAND
COURTNEY-PAYON
MAP OF
WEST
PERMIAN BASIN
SOUTHWEST MAPPING CO.
1111 FT. WORTH NATL. BANK BLDG. PH. 3-3115
FORT WORTH, TEXAS
PRICE: $2.00

CRANE
UPTON
PECOS
JORDAN
McKNIGHT
SANDHILLS
UNIVERSITY
CHURCH & FIELDS
GULF-McELROY
CLINTIC
J. H. GIBSON
McCAMEY
HURDLE
MASTERSON
WEBER
ROWAN-TOMG
TAYLOR-LINK
YATES
TOBORG
TOWNSHIP
RAILROAD
PACIFIC
TEXAS
SCHOOL
LAND
STATE
UNIVERSITY

CRANE
PECOS
JORDAN
ADDELL
McKNIGHT
SANDHILLS
SANDHILLS ORDOVICIAN
SCHOOL LAND
UNIVERSITY LAND
CHURCH & FIELDS
GULF-McELROY
CLINTIC
McCAMEY
BENNETT
McSTEPSON
ROWAN-TONG
TAYLOR-LINK
PECOS VALLEY
SOUTHWARD
SHIPLEY
TEXAS AND PACIFIC
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T. C. R. R.
T. & ST. L. R. R.
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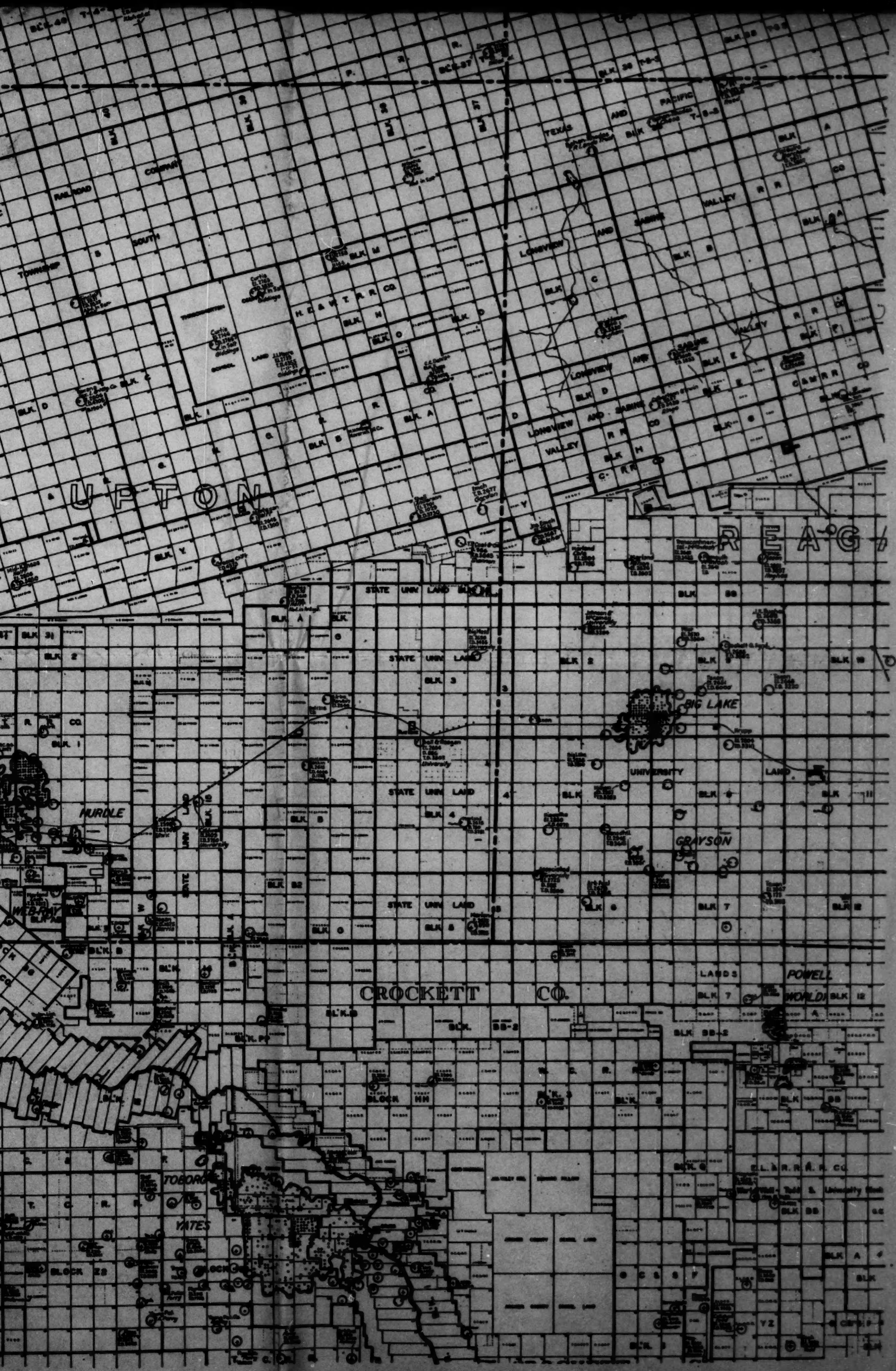

UPTON
CROCKETT CO.
BIG LAKE
GRAYSON
MURDLE
TOBORO
YATES
POWELL
WORLD
UNIVERSITY
LAND
STATE UNIV LAND
TEXAS PACIFIC RAILROAD COMPANY
LONGVIEW AND SABINE VALLEY R R CO
H E & W T R R CO
G C & S F R R CO

SOUTHEAST PORTION
WEST TEXAS
CROCKETT
PERMIAN BASIN

PECOS

SCHLEICHER

SUTTON

EDWARD

TERRELL

VAL VERDE

GENERALIZED SECTION
EDWARDS PLATEAU

PENNSYLVANIAN

ORDOVICIAN

EDWARDS

PROBABLE PRODUCTION
AND ORDOVICIAN FORMAT

KINNEY

DEL RIO

N

OUTCROP

CRETACEOUS

EAGLE P

MAVERICK

EAGLE PASS

CARRIZO

McCULLOCH

SAN SABA

LAMPASAS

MENARD

BURNET

CENTRAL MINERAL UPLIFT

SURFACE BEDS

MASON

LLANO

KIMBLE

GILLESPIE

BLANCO

ION FROM PENNSYLVANIAN
RMATION

KERR

HAYS

P L A T E A U

KENDALL

9000 SQUARE MILES
EDWARDS PLATEAU AREA

REAL

BANDERA

COMAL

GUADAL

BEXAR

FAULT

OUT-CROP

CRETACEOUS

LOWER

MAIN

BALCONES

SAN ANTONIO

UVALDE

MEDINA

TAYLOR PRODUCTION

10,800 SQUARE MILES
FAULT LINE ZONE AR

WILSON

GENERALIZED SECTION
PEARSALL AREA
FAULT LINE ZONE

NAVARRO

FRIO

P A S S

F A U L T

ZAVALLA

ATASCOSA

O S P R I N G S

McCULLOCH

SAN SABA

LAMPASAS

MENARD

CENTRAL MINERAL UPLIFT

SURFACE BEDS

PENNSYLVANIAN
MISSISSIPPIAN
ORDOVICIAN - ALLEN-HORNER LS.
CAMBRIAN
PRE-CAMBRIAN (GRANITES & GNEISS)

BURNET

MASON

MASON

LLANO

KIMBLE

R D S

GILLESPIE

BLANCO

ODUCTION FROM PENNSYLVANIAN
AN FORMATION

KERR

RDS

P L A T E A U

KENDALL

9000 SQUARE MILES
EDWARDS PLATEAU AREA

REAL

BANDERA

COMAL

T

E

BEXAR

OUT-CROP

FAULT

CRETACEOUS

LOWER

MAIN

BALCONES

UVALDE

MEDINA

SAN ANTONIO

ALTA VISTA

COPPERAS

TAYLOR

UNION LAKE

ADAMS

SOMERSET

10,800 SQU
FAULT LIN

TAYLOR PRODUCTION

GENERALIZED PEARSALL FAULT LINE AREA SECTION

NAVARRO

FRIO

P A S S

F A U L T

ZAVALLA

ATASCOSA

Z O S P R I N G S

BELL

ROBERTSON

WHITE

FAULT LINE TYPE SECTION

TERTIARY (EOCENE)

1000

2000

3000

Fay Zone, Taylor-Reklaw Calcs

Frio Zone, Top Fedwell Ls

TYNDALL

BYNUM VILLE

3900

Florida, Fay Zone, Basal Sun Formation

4000

Florida, Fay Zone, Thorp Sand Zone

5000

MANDA

6000

MILAM

TRACY

WILLIAMSON

BURLESON

TRAVIS

AUSTIN

LEE

WASHINGTON

SERPENTINE PLUG PRODUCTION

BASTROP

CEDAR CREEK

TYOST

SCHUMAEL-BATTE

HILBIG

CARROL

HAYS

FAYETTE

AUSTIN

CALDWELL

STAPLES

ZONE

COLORADO

GUADALUPE

EDWARDS LINE TREND

GONZALES

9700 SQUARE MILES JACKSON ZONE AREA

LAVACA

WHARTON

WILSON

DEWITT

KARNES

EOCENE

PETTUS SAND TREND

JACKSON

VICTORIA

GOLIAD

PLACEDO

EAGLE

CHITTIM
RANCH

MAVERICK

EAGLE PASS

PIEDRAS NEGRAS

CARRIZ

GENERALIZED SECTION
EAGLE PASS-CARRIZO SPRINGS
DISTRICT

EOCENE

UPPER CRETACEOUS

LOWER CRETACEOUS

0
1000
2000
3000 Possible Pay Zones Carrizo & above
4000
5000 Pay Zones Reserve Frio Co. Reserve
6000
7000 Probable Pay Zones Buda & Edwards
8000 Probable Pay Zone Rio Grande
9000
10000 Pay Zone Reserve Olmos
11000 Possible Pay Zone Wilcox
12000

LOWER CRETACEOUS OUT-CROP

SIERRA MADRE ORIENTAL

COAHUILA

PASS

NAVARRO

FAULT

ZAVALLA

FRIO

ATASCOSA

ZO SPRINGS

DIMMIT

LA SALLE

McMULLEN

DISTRICT

6000 SQUARE MILES
EAGLE PASS – CARRIZO SPRINGS DISTRICT

ZONE

WEBB

3000 SQUARE MILES
YEGUA – MOUNT SELMAN ZONE

MT. SELMA

DUVAL

ZAPATA

JIM HOGG

STARR

LOWER CRETACEOUS

EOCENE

LAREDO

ZAPATA

GENERALIZED SECTION
YEGUA - MT. SELMAN ZONE

GENERALIZED SECTION
(HIDALGO AREA)

E PASS NA

MAVERICK

ZAVALLA

FRIO

ATASCOSA

EAGLE PASS

I ZO SPRINGS

DIMMIT

D I S T R I C T

6000 SQUARE MILES
EAGLE PASS – CARRIZO SPRINGS DISTRICT

LA SALLE

McMULLEN

ZONE

WEBB

LAREDO

GENERALIZED SECTION
YEGUA – MT. SELMAN ZONE

MT. SELMAN

3000 SQUARE MILES
YEGUA – MOUNT SELMAN ZONE

DUVAL

COLE

ZAPATA

JIM HOGG

STARR

LOWER CRETACEOUS

EOCENE

GULF
COASTAL ZONE
VICTORIA
CALHOUN
REFUGIO
ARANSAS
SAN PATRICIO
NUECES
KLEBERG
KENNEDY
WILLACY
BROOKS
HIDALGO
JIM WELLS
LIVE OAK
BEE
GOLIAD
SALT DOME AREA
GENERALIZED SECTION COASTAL ZONE
MIOCENE
OLIGOCENE
EOCENE
Padre Island
Laguna Madre

C O A H U I L A

O R I E N T A L

LOWER CRETACEOUS

N U E

MO

SALTILLO

Published August 30, 1937

as a supplement to

THE OIL WEEKLY'S

SOUTHWEST TEXAS NUMBER

10 5 0 5 10 20 30 40 50

MILES

COMPILED FOR

DARBY PETROLEUM CORP.

BY

HARRY H. NOWLAN & RAE PREECE

SAN ANTONIO, TEXAS.

DECEMBER, 1936.

REVISED JULY, 1937.

— Note —

This map was drawn to show primarily the great area of the Rio Grande Embayment open for oil and gas exploration centering around San Antonio, Texas.

No detailed geologic contacts are shown except that of the Lower Cretaceous, which defines the Embayment. The known productive trends and zones are indicated. Approximately 25,000 feet of sediments are present, every major division of which now produces oil and/or gas somewhere in the Embayment.

REGIONAL MAP
RIO GRANDE EMBAYMENT
SOUTH TEXAS & NORTHEAST MEXICO
SHOWING
OIL & GAS FIELDS
AND
PROSPECTIVE TERRITORY

MT. SEL

ZAPATA

JIM HOGG

BROOKS

STARR

HIDALGO

EOCENE

GENERALIZED SECTION (HIDALGO AREA)

PLIOCENE-MIOCENE

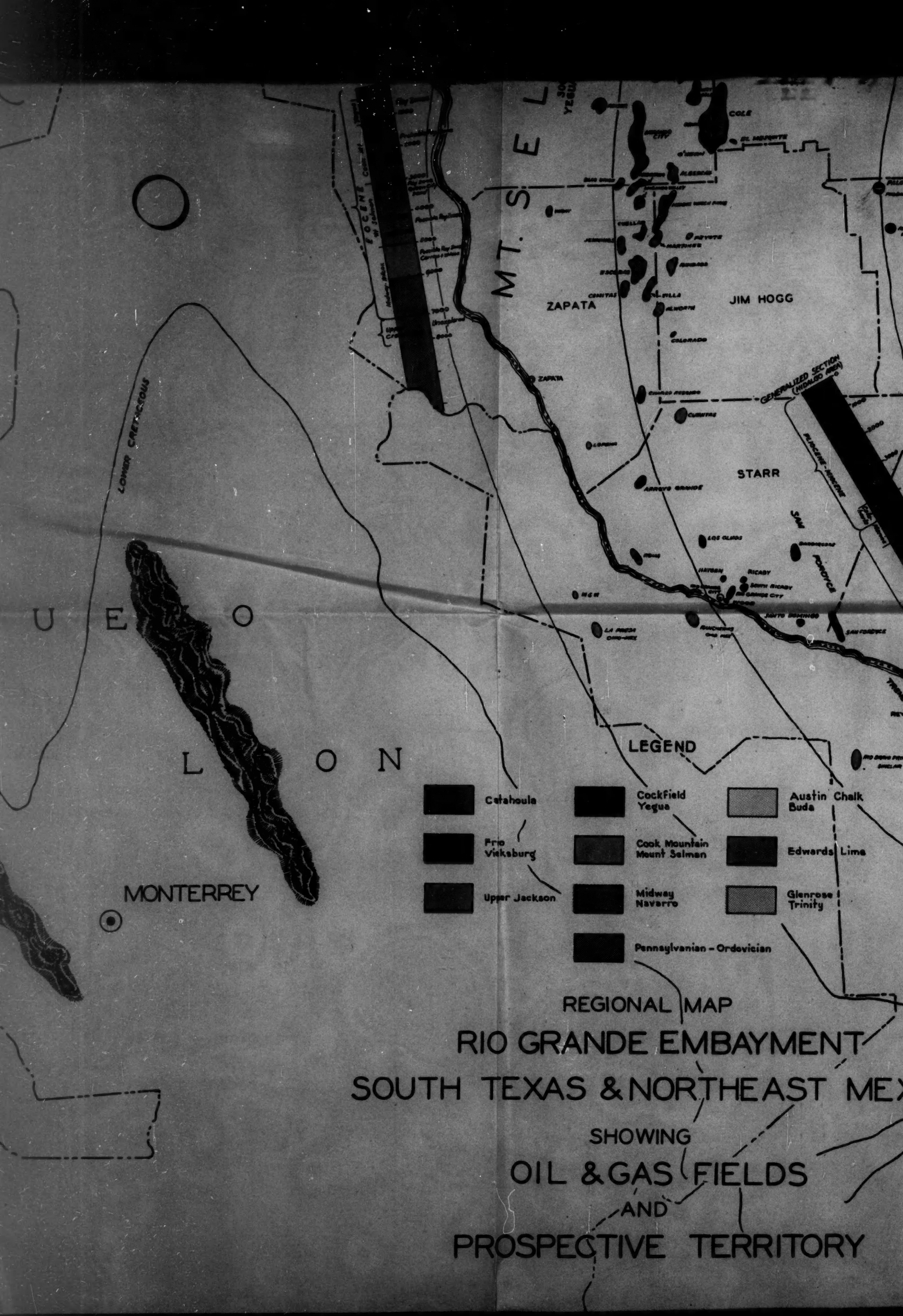
L O N

MONTERREY

REYNOSA

LEGEND

- Catahoula
- Frio Vicksburg
- Upper Jackson
- Cockfield Yegua
- Cook Mountain Mount Selman
- Midway Navarro
- Pennsylvanian – Ordovician
- Austin Chalk Buda
- Edwards Lime
- Glenrose Trinity



REGIONAL MAP
RIO GRANDE EMBAYMENT
SOUTH TEXAS & NORTHEAST MEX
SHOWING
OIL & GAS FIELDS
AND
PROSPECTIVE TERRITORY

KLEBERG

BROOKS

KENNEDY

SALT DOME AREA

Laguna Madre

Padre Island

G U L F

HIDALGO

WILLACY

CAMERON

MERCEDES

REYNOSA

BROWNSVILLE

O F

TAMPICO DISTRICT
275 MILES SOUTH OF BROWNSVILLE
TOTAL PRODUCTION TO END OF 1932
1,650,000,000 BBLS.
PRODUCING ZONES IN LOWER CRETACEOUS LIMESTONES

CHIJENE DOME

EXICO

M E X I C O

OIL AND GAS POSSIBILITIES

IN

NORTHEASTERN ARKANSAS AND WESTERN TENNESSEE

BY

W. P. JENNY, CONSULTING GEOLOGIST AND GEOPHYSICIST

HOUSTON TEXAS

SCALE IN MILES

0 10 20 30 40

MISSOURI

OZARK REGION

ARKANSAS VALLEY REGION

OUACHITA REGION

LITTLE ROCK

BENTON

PALEOZOIC

TERTIARY

MALVERN

-500'

-1000'

-4500'

SEARC

O60 O59 O54 O55 O56 O57 O53 O52 O50 O51 O49 O48 O43 O45

PALEOZOIC
TERTIARY

RIDGE

-500'
-1000'
-1500'
-2000'
-2500'
-3000'
-3500'
-4000'

TIPTONVILLE
UNION CITY
PARAGOULD
JOHNSBORO
BLYTHEVILLE
ETOWAH
RIPLEY
JACKSON
COVINGTON
BLYTHAVILLE
UVERGNE
McCROSKY
FORREST CITY
MEMPHIS
HELENA

DOWN
UP

90°
89°
34°

M I S S I S S I P P

PRINCIPAL OIL AND GAS REGIONS

LARGE OIL AND GAS FIEL

SMALL OIL AND GAS FIEL

POSITIVE MAGNETIC TRE

NEGATIVE MAGNETIC TRE

SCALE IN MILES

0 25 50 75 100 200

PALEOZOIC
TERTIARY

RIDGE

-500'
-1000'
-1500'
-2000'
-2500'
-3000'
-3500'
-4000'

TIPTONVILLE
UNION CITY
PHIBOT
PARAGOULD
JONESBORO
BLYTHEVILLE
YELLVILLE
RIPLEY
ETOWN
DOWN
UP
JACKSON
COVINGTON
BLYTHIA
AUVERGNE
McCROSKY
CROWLEY'S
FORREST CITY
MEMPHIS
HELENA

90°
89°

M I S S I S S I P P

PRINCIPAL OIL AND GAS REGIONS

LARGE OIL AND GAS FIELD

SMALL OIL AND GAS FIELD

POSITIVE MAGNETIC TREND

NEGATIVE MAGNETIC TREND

SCALE IN MILES

0 25 50 75 100 200

KENTUCKY

PARIS

NASHVILLE

16

17

18

TERTIARY

Cretaceous

JACKSON

12

13

14

15

SAVANNAH

SELMER

LAWRENCEBURG

88°

87°

35°

90°

85°

80°

45°

LAKE MICHIGAN

LAKE HURON

MICHIGAN

BASIN

LAKE ERIE

PENNSYLVANIA

FIELDS

FIELDS

TREND

TREND

200

OUACHITA

REGION

LITTLE ROCK

BENTON

PALEOZOIC

TERTIARY

MALVERN

-500'

-1000'

-1500'

-2000'

-2500'

Cretaceous

PROFILE 1

PROFILE 2

PROFILE 3

PROFILE 4

-3000'

-4500'

O 43

O 44

O 45

O 46

O 47

O 48

O 49

O 50

O 51

O 52

O 53

O 54

O 55

O 56

O 57

L O U I S I A N A

93°

92°

MONROE UPLIFT

LEGEND

MAGNETIC ZERO-ISOGAM

POSITIVE MAGNETIC TREND

NEGATIVE MAGNETIC TREND

POSSIBLE FAULT ZONE

F MAGNETIC FAULT INDICATION

NEGATIVE SIDE

POSITIVE SIDE

} OF MAGNETIC PROFILES

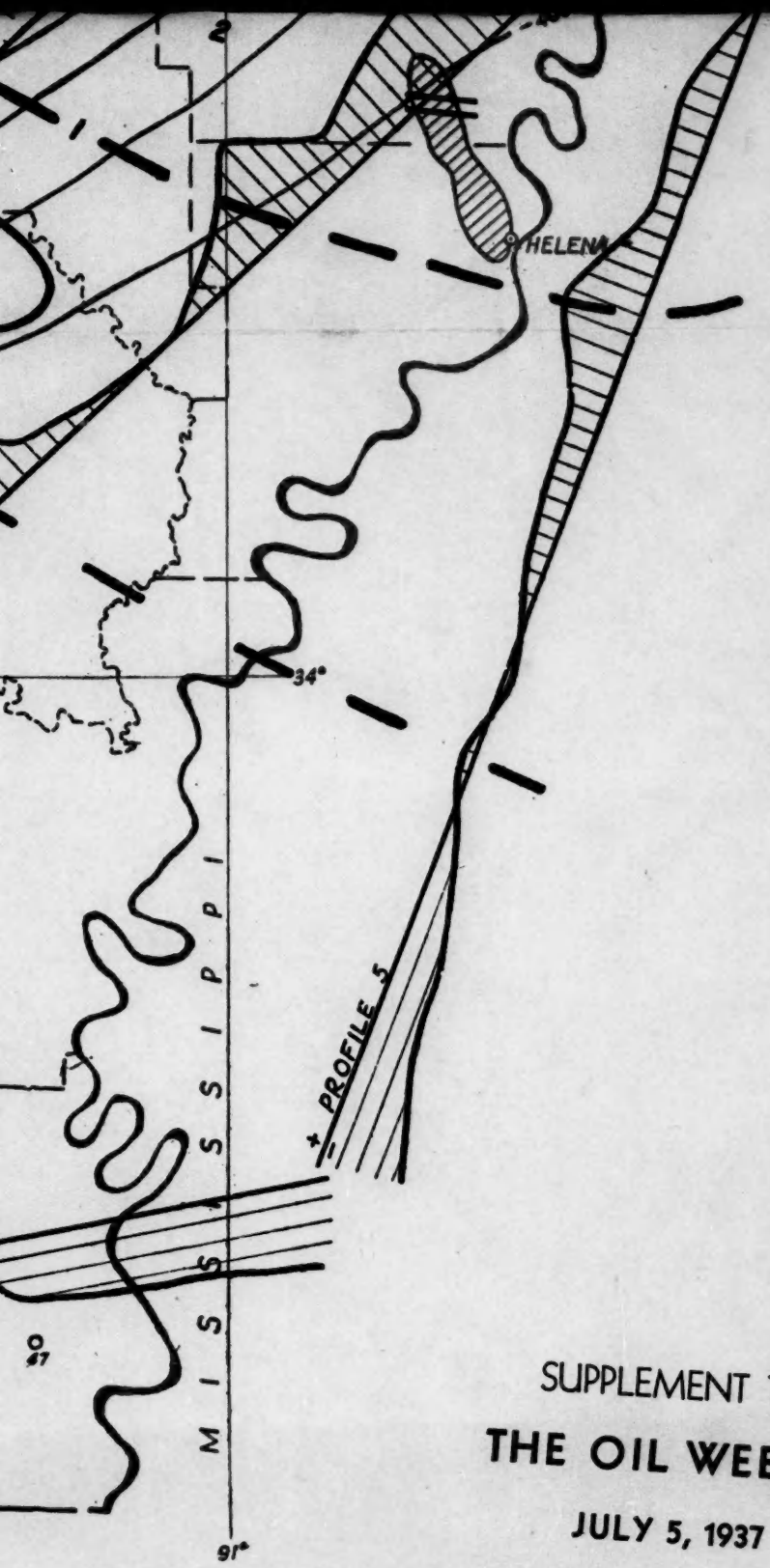
-1000' S. S.

O 44 WEL

DOM AT

ARE

REP IN S



SUPPLEMENT TO

THE OIL WEEKLY

JULY 5, 1937

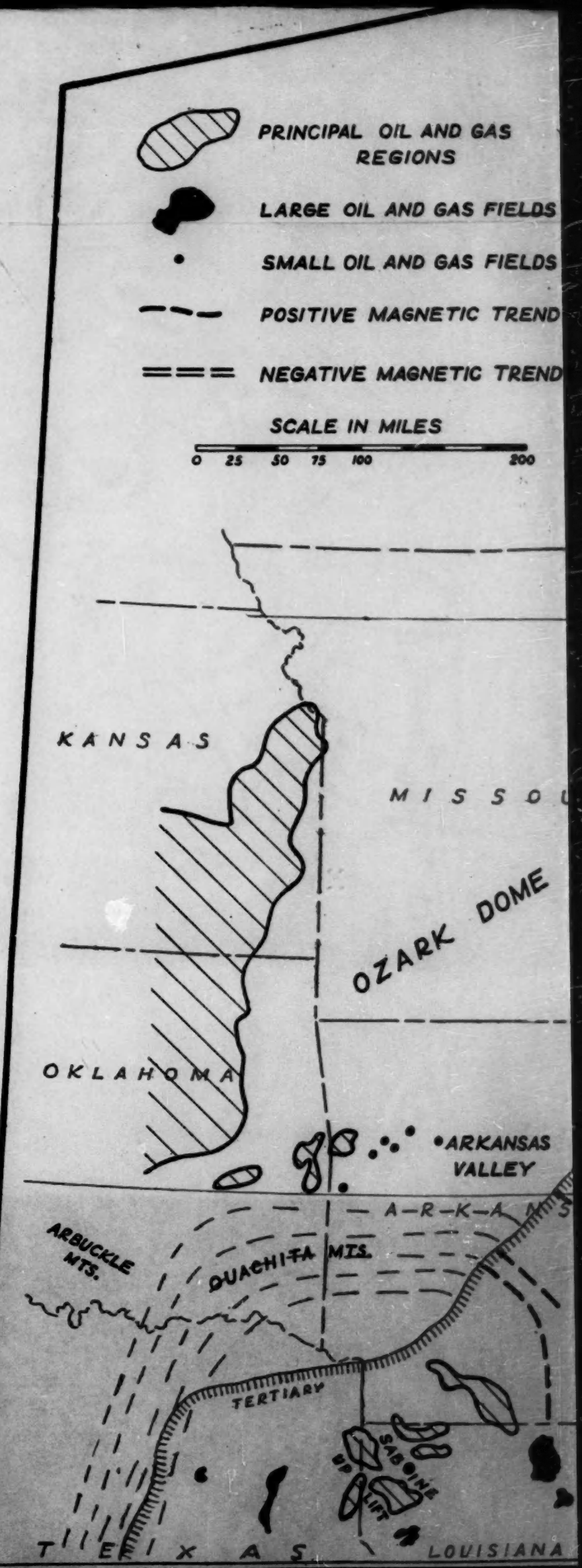
S. S. DEPTH TO PALEOZOIC FLOOR AFTER SPOONER AND BORN

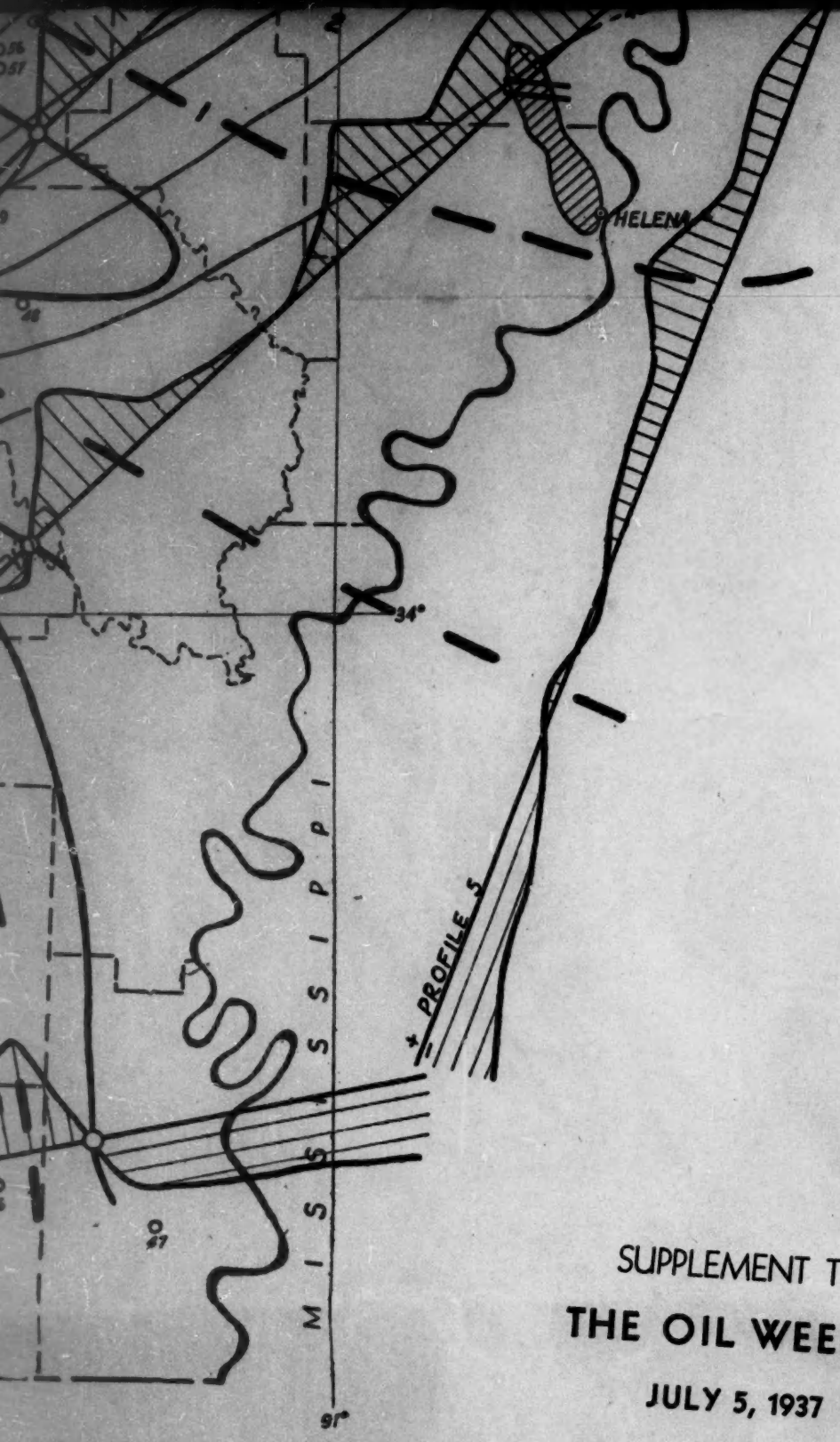
WELLS DRILLED FOR OIL { SPOONER'S. NUMBERS IN ARK. / BORN'S NUMBERS IN TENN.

DOMES UPLIFTED IN PART AT LEAST AT TIME OF EARTHQUAKES } AFTER FULLER

AREA OF LANDSLIDES DUE TO EARTHQUAKES } AFTER FULLER

REPORTED OIL AND GAS SHOWS IN SEEPAGES IN SHALLOW WELLS AND IN WELLS DRILLED FOR OIL





SUPPLEMENT TO

THE OIL WEEKLY

JULY 5, 1937

-1000' S. S. DEPTH TO PALEOZOIC FLOOR AFTER SPOONER AND BORN

WELLS DRILLED FOR OIL { SPOONER'S. NUMBERS IN ARK. / BORN'S NUMBERS IN TENN.

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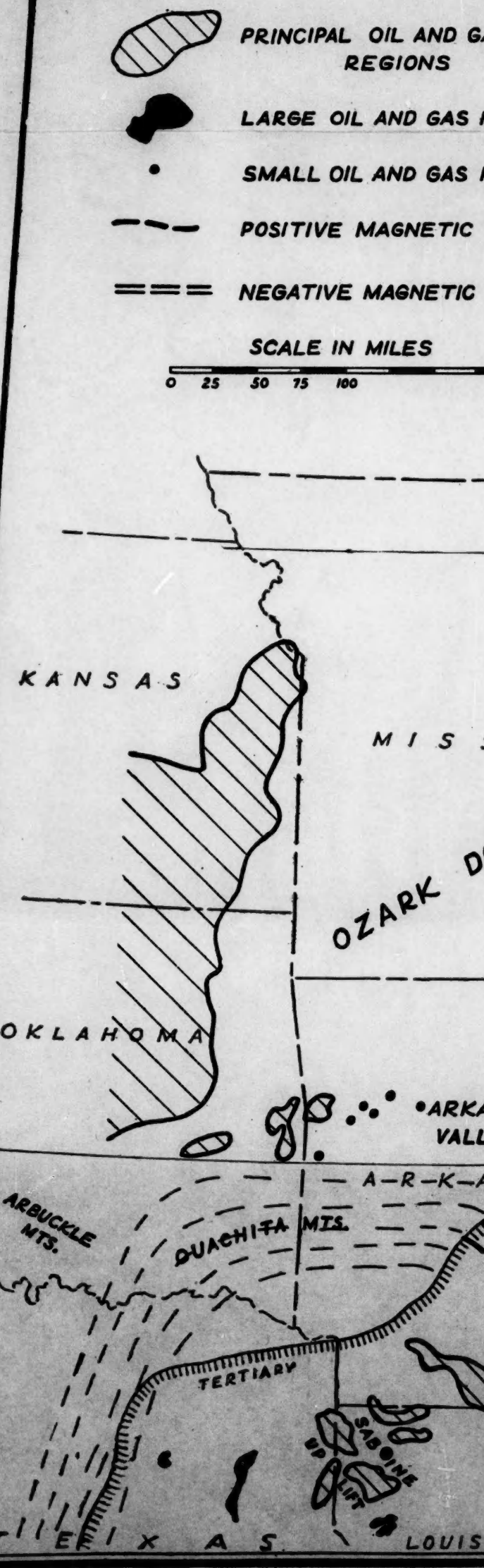

ND GAS
S

GAS FIELDS

GAS FIELDS

TIC TREND

ETIC TREND

200

MICHIGAN

BASIN

LAKE MICHIGA

HURON

LAKE ERIE

PENNSYLVANIA

O H I O

INDIANA

ILLINOIS

ILLINOIS
BASIN

S S O U R I

DOME

CINCINNATI
DOME

WEST
VIRGINIA

K E N T U C K Y

TERTIARY

NASHVILLE

T E N N E S S E E

DOME

MOUNTAINS

NORTH CAROLINA

RKANSAS
VALLEY

K-A N S A S

MISS. - ITENN. - ARK.
BASIN

TERTIARY

APPALACHIAN

MISSISSIPPI

A L A B A M A

G E O R G I A

TERTIARY

UISIANA